Formosa Plastics®

Formosa Plastics Corporation, Texas
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April 30, 2019

Certified Mail: 7018 0360 0000 5327 9740
Air Section Manager, Region 14
Texas Commission Environmental Quality
6300 Ocean Drive, Suite 1200
Corpus Christi, Texas 78412

RE: Formosa Plastics Corporation, Texas
TCEQ Air Quality Account No. CB-0038-Q
First Quarter 2019 SUMMA Canister Report

Dear Air Section Manager:

Per your request, we have enclosed a quarterly summary of results from the Point Comfort SUMMA Canister Monitoring System. The first quarter of 2019 results are shown for each site on the attached tables. Additionally, we have included wind roses generated by the weather sensor on the FTIR or wind direction data from other air monitoring devices for each SUMMA canister sampling date during the first quarter of 2019.

Beginning with the first sample date in the fourth quarter 2003, we have also included average wind speed and wind direction on the tables. This was done at the request of Mr. David Carmichael of the TCEQ Austin office. In addition, at the request of Mr. Carmichael, the following changes have been made to the tables:

The duplicate sample data for all compounds has been removed from the VOC Canister Analysis Tables;

The averaged duplicate sample data was replaced with only the routine sample data in the VOC Canister Analysis Tables; and

An additional VOC Canister Analysis Table was created for the duplicate samples data. This was done so that the relative percent difference (RPD) could be calculated. The calculation for obtaining the RPD is shown in the Duplicate Sample section of the attached Calculation Methodology.

During a telephone conversation with Mr. Vincent Leopold (TCEQ TARA Group) on April 9, 1998, he requested a disk copy of the SUMMA Canister sampling results be included with the quarterly report. Enclosed is an electronic copy of the first quarter 2019 SUMMA Canister Report.

Should you have any questions please contact Vanessa Peppers by e-mail at VanessaP@ftpc.fpcusa.com.

Sincerely,

Rick Crabtree
Vice President/General Manager
Formosa Plastics Corporation, Texas

Attachments

cc: Dr. Tracie Phillips
Toxicology Division
Texas Commission on Environmental Quality
P. O. Box 13087
Austin, Texas 78711-3087

Certified Mail: 7018 2290 0000 0529 6173

FORMOSA PLASTICS CORPORATION, TEXAS

SUMMA CANISTER QUARTERLY REPORT

CALCULATION METHODOLOGY

Following is the calculation methodologies used to calculate the Year-To-Date Sum and Year-To-Date Average for the North SUMMA canister sampling site. Please note, there are two columns associated with each component analyzed. The column titled "Actual" represents the results reported by the independent laboratory contracted to analyze the SUMMA canisters. The column titled "½ Reported LOD (Limit of Detection)" represents either the actual result or one-half the limit of detection reported by the laboratory, as appropriate.

ACTUAL

The following is entered into the column titled "Actual":

Numerical Value - Actual results reported by the independent laboratory when the result is equal to or greater than the limit of detection. The numerical value is used to calculate the year-to-date sum and the year-to date average;

ND (Non Detect) - As reported by the laboratory. The value of "0" is used to calculate the year to date sum and the year-to-date average;

BDL (Below Detection Limit) - Entered when the actual result is less than the reported limit of detection. The value of "0" is used to calculate the year-to-date sum and the year-to-date average;

"*" - Non operational sampling period.

½ REPORTED LOD (LIMIT OF DETECTION)

The following is entered into the column titled "½ Reported LOD":

Numerical Value - Actual results reported by the independent laboratory when the result is equal to or greater than the limit of detection. The numerical value is used to calculate the year-to-date sum and the year-to-date average;

½ the Reported Limit of Detection - ½ the reported limit of detection when the results are reported as non-detect and when the actual result is below the detection limit (BDL). ½ the reported limit of detection is used to calculate the year-to-date sum and the year-to-date average.

"*" - Non operational sampling period.

Limit of Detection (LOD) - Method Detection Limit, Limit of Detection, Reporting Limit, etc... as reported by the independent laboratory conducting the analysis.

DUPLICATE SAMPLES

The duplicate samples are reported discreetly on a separate VOC Canister Analysis Table. This is done so that the duplicate samples can be compared to the routine samples and the Relative Percent Difference (RPD) can be calculated. The RPD is calculated using the following equation:

$$\{(X1-X2) / [(X1+X2) / 2]\} \times 100$$

Where the duplicate and routine sample indicated "ND", the RPD is reported as "ND". Where the duplicate or routine sample indicated "ND" and the other indicated a concentration greater than ND, the RPD is calculated by using the value entered in the actual concentration column and the value entered in the ½ Reported LOD column.

YEAR-TO-DATE SUM

The year-to-date sum is calculated by taking the sum of all values entered in the column.

YEAR-TO-DATE AVERAGE

The following formula is used to calculate the year-to-date average:

Year-To-Date Sum / (Number of theoretical sample periods - Number of non operational sample periods)

FORMOSA VOC CANISTER ANALYSIS
1st QUARTER 2019
POINT COMFORT - CITY HALL SITE

SAMPLE DATE	AVG.WIND DIRECTION (Degrees)	AVG.WIND SPEED (mph)	ETHYLENE		1,3 BUTADIENE		BENZENE		VINYL CHLORIDE		ETHYLENE DICHLORIDE	
			Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)
4/5/2018	96	5.6	ND	0.0500	ND	0.1250	0.1990	0.1990	ND	0.0500	0.1160	0.1160
4/11/2018	114	4.4	ND	0.0500	ND	0.1250	0.3390	0.3390	0.1510	0.1510	0.1730	0.1730
4/17/2018	144	9.7	ND	0.0500	ND	0.1250	0.3190	0.3190	ND	0.0500	ND	0.0500
4/23/2018	243	1.2	ND	0.0500	ND	0.1250	0.2270	0.2270	2.5900	2.5900	0.8170	0.8170
4/29/2018	106	5.5	ND	0.0500	ND	0.1250	0.1580	0.1580	ND	0.0500	ND	0.0500
5/5/2018	320	3.5	ND	0.0500	ND	0.1250	0.4130	0.4130	0.9900	0.9900	0.2730	0.2730
5/11/2018	122	9.1	ND	0.0500	ND	0.1250	0.1340	0.1340	ND	0.0500	ND	0.0500
5/17/2018	159	6.0	ND	0.0500	ND	0.1250	0.1250	0.1250	ND	0.0500	ND	0.0500
5/23/2018	96	5.2	*	*	*	*	*	*	*	*	*	*
5/29/2018	144	5.2	ND	0.0500	ND	0.1250	0.1680	0.1680	ND	0.0500	0.1630	0.1630
6/4/2018	169	4.4	ND	0.0500	ND	0.1250	0.1800	0.1800	0.1090	0.1090	0.1030	0.1030
6/10/2018	140	8.8	ND	0.0500	ND	0.1250	0.1750	0.1750	ND	0.0500	ND	0.0500
6/16/2018	114	8.9	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
6/22/2018	151	4.9	ND	0.0500	ND	0.1250	0.2280	0.2280	ND	0.0500	0.1380	0.1380
6/28/2018	143	7.0	ND	0.0500	ND	0.1250	0.2150	0.2150	ND	0.0500	ND	0.0500
7/4/2018	126	7.1	ND	0.0500	ND	0.1250	0.1020	0.1020	0.8600	0.8600	6.1100	6.1100
7/10/2018	121	4.6	ND	0.0500	ND	0.1250	0.3820	0.3820	ND	0.0500	ND	0.0500
7/16/2018	153	5.9	ND	0.0500	ND	0.1250	0.2210	0.2210	ND	0.0500	0.1760	0.1760
7/22/2018	176	5.7	ND	0.0500	ND	0.1250	0.1850	0.1850	ND	0.0500	0.1990	0.1990
7/28/2018	133	4.0	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
8/3/2018	107	4.1	ND	0.0500	ND	0.1250	0.3850	0.3850	0.6580	0.6580	0.7690	0.7690
8/9/2018	138	5.6	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
8/17/2018	135	6.0	ND	0.0500	ND	0.1250	0.2890	0.2890	ND	0.0500	ND	0.0500
8/21/2018	155	5.4	ND	0.0500	ND	0.1250	0.1220	0.1220	ND	0.0500	ND	0.0500
8/29/2018	121	4.3	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
9/6/2018	91	1.8	ND	0.0500	ND	0.1250	0.1930	0.1930	0.7720	0.7720	0.9860	0.9860
9/12/2018	60	4.6	ND	0.0500	ND	0.1250	0.1530	0.1530	ND	0.0500	0.1100	0.1100
9/18/2018	187	1.3	*	*	*	*	*	*	*	*	*	*
9/24/2018	115	4.5	ND	0.0500	ND	0.1250	0.1490	0.1490	ND	0.0500	ND	0.0500
9/30/2018	65	2.2	ND	0.0500	ND	0.1250	0.5390	0.5390	2.3200	2.3200	1.2400	1.2400
10/6/2018	126	7.1	*	*	*	*	*	*	*	*	*	*
10/12/2018	88	5.1	ND	0.0500	ND	0.1250	0.4490	0.4490	0.7060	0.7060	2.0900	2.0900
10/18/2018	343	4.9	0.6490	0.6490	ND	0.1250	0.6530	0.6530	0.9220	0.9220	ND	0.0500
10/26/2018	249	1.5	0.6510	0.6510	ND	0.1250	0.3480	0.3480	0.3960	0.3960	0.1230	0.1230
11/1/2018	324	6.2	*	*	*	*	*	*	*	*	*	*
11/7/2018	157	4.8	ND	0.0500	0.275	0.2750	0.1720	0.1720	ND	0.0500	ND	0.0500
11/13/2018	321	7.6	ND	0.0500	ND	0.1250	0.1190	0.1190	ND	0.0500	ND	0.0500
11/17/2018	88	4.5	*	*	*	*	*	*	*	*	*	*
11/25/2018	316	3.0	ND	0.0500	ND	0.1250	0.2070	0.2070	ND	0.0500	ND	0.0500
12/1/2018	240	2.7	ND	0.0500	ND	0.1250	0.1750	0.1750	ND	0.0500	0.1220	0.1220
12/7/2018	102	1.9	ND	0.0500	ND	0.1250	0.2320	0.2320	ND	0.0500	ND	0.0500
12/13/2018	235	6.7	ND	0.0500	ND	0.1250	0.1500	0.1500	ND	0.0500	ND	0.0500
12/19/2018	15	1.7	ND	0.0500	ND	0.1250	0.2280	0.2280	0.1510	0.1510	0.2110	0.2110
12/25/2018	106	5.9	ND	0.0500	ND	0.1250	0.1090	0.1090	ND	0.0500	ND	0.0500
12/31/2018	334	4.2	ND	0.0500	ND	0.1250	0.1970	0.1970	ND	0.0500	ND	0.0500

FORMOSA VOC CANISTER ANALYSIS
1st QUARTER 2019
POINT COMFORT - CITY HALL SITE

SAMPLE DATE	AVG.WIND DIRECTION (Degrees)	AVG.WIND SPEED (mph)	ETHYLENE		1,3 BUTADIENE		BENZENE		VINYL CHLORIDE		ETHYLENE DICHLORIDE	
			Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)
1/6/2019	118	5.8	ND	0.0500	ND	0.1250	0.1010	0.1010	ND	0.0500	ND	0.0500
1/12/2019	307	4.4	ND	0.0500	ND	0.1250	0.1640	0.1640	ND	0.0500	ND	0.0500
1/18/2019	144	5.2	ND	0.0500	ND	0.1250	0.2950	0.2950	ND	0.0500	ND	0.0500
1/24/2019	90	5.1	ND	0.0500	ND	0.1250	0.2110	0.2110	ND	0.0500	ND	0.0500
1/30/2019	42	7.8	0.1080	0.1080	ND	0.1250	0.3230	0.3230	0.4010	0.4010	1.5400	1.5400
2/5/2019	125	5.9	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
2/11/2019	140	2.2	ND	0.0500	ND	0.1250	0.2050	0.2050	0.1930	0.1930	ND	0.0500
2/17/2019	336	5.3	ND	0.0500	ND	0.1250	0.4200	0.4200	0.2920	0.2920	ND	0.0500
2/23/2019	197	1.2	*	*	*	*	*	*	*	*	*	*
3/1/2019	357	3.2	0.9830	0.9830	ND	0.1250	0.3320	0.3320	0.9570	0.9570	0.1900	0.1900
3/7/2019	113	4.2	*	*	*	*	*	*	*	*	*	*
3/13/2019	140	9.4	*	*	*	*	*	*	*	*	*	*
3/19/2019	57	6.7	*	*	*	*	*	*	*	*	*	*
3/25/2019	142	3.2	*	*	*	*	*	*	*	*	*	*
3/31/2019	337	6.4	*	*	*	*	*	*	*	*	*	*

	ETHYLENE		1,3 BUTADIENE		BENZENE		VINYL CHLORIDE		ETHYLENE DICHLORIDE	
	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)
Year-To-Date Sum	2.3910	4.6410	0.2750	6.2750	10.6900	10.9400	12.4680	14.1180	15.7510	17.1510
Rolling Year Average	0.0488	0.0947	0.0056	0.1281	0.2182	0.2233	0.2544	0.2881	0.3214	0.3500
Annual Average	0.1212	0.1601	0.0000	0.1250	0.2279	0.2334	0.2048	0.2326	0.1922	0.2311
Number of theoretical sample periods	60	60	60	60	60	60	60	60	60	60
Number of non operational sample periods	11	11	11	11	11	11	11	11	11	11

* - non operational, data from the North site was used for Wind Direction and Wind Speed, if available

TCEQ Air Monitoring Comparison Values (ppb)			Investigation
Chemical	ST	LT	Limit (ppb)
Vinyl Chloride	27,000	0.47	25
Ethylene Dichloride	94	0.72	29.7
Benzene	180	1.4	28.2
Ethylene	500,000	30	500
1, 3 Butadiene	1,700	9	25

FORMOSA VOC CANISTER ANALYSIS
1st QUARTER 2019
POINT COMFORT - CITY HALL
DUPLICATE SAMPLE SCHEDULE

SAMPLE DATE	AVG.WIND DIRECTION (Degrees)	AVG.WIND SPEED (mph)	ETHYLENE		1,3 BUTADIENE		BENZENE		VINYL CHLORIDE		ETHYLENE DICHLORIDE	
			Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)
05/05/18	320	3.5	ND	0.0500	ND	0.1250	0.4130	0.4130	0.9900	0.9900	0.2730	0.2730
05/05/18$_d$	320	3.5	ND	0.0500	ND	0.1250	0.3700	0.3700	1.2000	1.2000	0.1500	0.1500
Relative Percent Difference (RPD)			ND		ND		10.9834		-19.1781		58.1560	
06/16/18	114	8.9	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
06/16/18$_d$	114	8.9	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
Relative Percent Difference (RPD)			ND		ND		ND		ND		ND	
07/16/18	153	5.9	ND	0.0500	ND	0.1250	0.2210	0.2210	ND	0.0500	0.1760	0.1760
07/16/18$_d$	153	5.9	ND	0.0500	ND	0.1250	0.2380	0.2380	ND	0.0500	0.1720	0.1720
Relative Percent Difference (RPD)			ND		ND		-7.4074		ND		2.2989	
09/30/18	65	2.2	ND	0.0500	ND	0.1250	0.5390	0.5390	2.3200	2.3200	1.2400	1.2400
09/30/18$_d$	65	2.2	ND	0.0500	ND	0.1250	0.5620	0.5620	2.3100	2.3100	1.1400	1.1400
Relative Percent Difference (RPD)			ND		ND		-4.1780		0.4320		8.4034	
11/01/18	324	6.2	*	*	*	*	*	*	*	*	*	*
11/01/18$_d$	324	6.2	*	*	*	*	*	*	*	*	*	*
Relative Percent Difference (RPD)			*		*		*		*		*	
12/25/18	106	5.9	ND	0.0500	ND	0.1250	0.1090	0.1090	ND	0.0500	ND	0.0500
12/25/18$_d$	106	5.9	*	*	*	*	*	*	*	*	*	*
Relative Percent Difference (RPD)			*		*		*		*		*	
01/30/19	42	7.8	0.1080	0.1080	ND	0.1250	0.3230	0.3230	0.4010	0.4010	1.5400	1.5400
01/30/19$_d$	42	7.8	ND	0.0500	ND	0.1250	0.3650	0.3650	0.5020	0.5020	1.7300	1.7300
Relative Percent Difference (RPD)			73.4177		ND		-12.2093		-22.3699		-11.6208	

* - non operational, data from the North site was used for Wind Direction and Wind Speed, if available

FORMOSA VOC CANISTER ANALYSIS
1st QUARTER 2019
POINT COMFORT - FORMOSA TRAINING COMPLEX

SAMPLE DATE	AVG.WIND DIRECTION (Degrees)	AVG.WIND SPEED (mph)	ETHYLENE		1,3 BUTADIENE		BENZENE		VINYL CHLORIDE		ETHYLENE DICHLORIDE	
			Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)
4/5/2018	96	5.6	ND	0.0500	ND	0.1250	0.2700	0.2700	0.3370	0.3370	0.3560	0.3560
4/11/2018	114	4.4	ND	0.0500	ND	0.1250	0.3620	0.3620	0.4940	0.4940	0.5740	0.5740
4/17/2018	144	9.7	ND	0.0500	ND	0.1250	0.1600	0.1600	ND	0.0500	0.1270	0.1270
4/23/2018	243	1.2	ND	0.0500	ND	0.1250	0.3330	0.3330	1.3800	1.3800	0.3610	0.3610
4/29/2018	106	5.5	ND	0.0500	ND	0.1250	0.1080	0.1080	ND	0.0500	ND	0.0500
5/5/2018	320	3.5	ND	0.0500	ND	0.1250	0.1030	0.1030	ND	0.0500	ND	0.0500
5/11/2018	122	9.1	ND	0.0500	ND	0.1250	0.1170	0.1170	ND	0.0500	ND	0.0500
5/17/2018	159	6.0	ND	0.0500	ND	0.1250	0.1250	0.1250	ND	0.0500	ND	0.0500
5/23/2018	96	5.2	*	*	*	*	*	*	*	*	*	*
5/29/2018	144	5.2	ND	0.0500	ND	0.1250	0.1380	0.1380	ND	0.0500	0.1160	0.1160
6/4/2018	169	4.4	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	0.1160	0.1160
6/10/2018	140	8.8	ND	0.0500	ND	0.1250	0.1450	0.1450	ND	0.0500	0.3220	0.3220
6/16/2018	114	8.9	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
6/22/2018	151	4.9	ND	0.0500	ND	0.1250	0.1790	0.1790	ND	0.0500	0.1930	0.1930
6/28/2018	143	7.0	ND	0.0500	ND	0.1250	0.1490	0.1490	ND	0.0500	0.3960	0.3960
7/4/2018	126	7.1	*	*	*	*	*	*	*	*	*	*
7/10/2018	121	4.6	ND	0.0500	ND	0.1250	0.2370	0.2370	ND	0.0500	ND	0.0500
7/16/2018	153	5.9	ND	0.0500	ND	0.1250	0.2580	0.2580	ND	0.0500	0.1030	0.1030
7/22/2018	176	5.7	ND	0.0500	ND	0.1250	0.1080	0.1080	ND	0.0500	0.1330	0.1330
7/28/2018	133	4.0	ND	0.0500	ND	0.1250	0.1810	0.1810	ND	0.0500	ND	0.0500
8/3/2018	107	4.1	ND	0.0500	ND	0.1250	0.2720	0.2720	1.6000	1.6000	0.1470	0.1470
8/9/2018	138	5.6	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	0.1350	0.1350
8/17/2018	135	6.0	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	0.2690	0.2690
8/21/2018	155	5.4	ND	0.0500	ND	0.1250	0.1340	0.1340	ND	0.0500	ND	0.0500
8/29/2018	121	4.3	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	0.1020	0.1020
9/6/2018	91	1.8	ND	0.0500	ND	0.1250	0.3340	0.3340	0.7480	0.7480	1.2500	1.2500
9/12/2018	60	4.6	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	0.1140	0.1140
9/18/2018	187	1.3	*	*	*	*	*	*	*	*	*	*
9/24/2018	115	4.5	ND	0.0500	ND	0.1250	0.1860	0.1860	ND	0.0500	ND	0.0500
9/30/2018	65	2.2	ND	0.0500	ND	0.1250	0.6890	0.6890	2.7400	2.7400	2.2600	2.2600
10/6/2018	126	7.1	*	*	*	*		*	*	*	*	*
10/12/2018	88	5.1	ND	0.0500	ND	0.1250	0.4090	0.4090	1.3300	1.3300	3.9700	3.9700
10/18/2018	343	4.9	1.2200	1.2200	ND	0.1250	0.5310	0.5310	1.3900	1.3900	ND	0.0500
10/26/2018	249	1.5	*	*	*	*	*	*	*	*	*	*
11/1/2018	324	6.2	*	*	*	*	*	*	*	*	*	*
11/11/2018	24	6.2	ND	0.0500	ND	0.1250	0.5490	0.5490	0.6790	0.6790	0.3280	0.3280
11/17/2018	88	4.5	ND	0.0500	ND	0.1250	0.1320	0.1320	ND	0.0500	ND	0.0500
11/23/2018	46	0.4	ND	0.0500	ND	0.1250	0.2610	0.2610	0.7120	0.7120	0.6110	0.6110
11/29/2018	145	3.2	ND	0.0500	0.272	0.2720	0.4590	0.4590	ND	0.0500	0.3840	0.3840
12/1/2018	240	2.7	ND	0.0500	ND	0.1250	0.2100	0.2100	ND	0.0500	ND	0.0500
12/7/2018	102	1.9	*	*	*	*	*	*	*	*	*	*
12/13/2018	235	6.7	ND	0.0500	ND	0.1250	0.1570	0.1570	ND	0.0500	ND	0.0500
12/19/2018	15	1.7	ND	0.0500	ND	0.1250	0.2440	0.2440	0.1320	0.1320	0.4010	0.4010
12/25/2018	106	5.9	ND	0.0500	ND	0.1250	0.1430	0.1430	ND	0.0500	ND	0.0500
12/31/2018	334	4.2	ND	0.0500	ND	0.1250	0.2340	0.2340	ND	0.0500	ND	0.0500

FORMOSA VOC CANISTER ANALYSIS
1st QUARTER 2019
POINT COMFORT - FORMOSA TRAINING COMPLEX

SAMPLE DATE	AVG.WIND DIRECTION (Degrees)	AVG.WIND SPEED (mph)	ETHYLENE		1,3 BUTADIENE		BENZENE		VINYL CHLORIDE		ETHYLENE DICHLORIDE	
			Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)
1/6/2019	118	5.8	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
1/12/2019	307	4.4	ND	0.0500	ND	0.1250	0.2620	0.2620	ND	0.0500	ND	0.0500
1/18/2019	144	5.2	ND	0.0500	ND	0.1250	0.3130	0.3130	ND	0.0500	0.1100	0.1100
1/24/2019	90	5.1	ND	0.0500	ND	0.1250	0.1670	0.1670	ND	0.0500	ND	0.0500
1/30/2019	42	7.8	ND	0.0500	ND	0.1250	0.2230	0.2230	0.5130	0.5130	0.6790	0.6790
2/5/2019	125	5.9	ND	0.0500	0.684	0.6840	0.1170	0.1170	ND	0.0500	ND	0.0500
2/11/2019	140	2.2	ND	0.0500	ND	0.1250	0.1790	0.1790	ND	0.0500	ND	0.0500
2/17/2019	336	5.3	ND	0.0500	ND	0.1250	0.2990	0.2990	0.1650	0.1650	ND	0.0500
2/23/2019	197	1.2	*	*	*	*	*	*	*	*	*	*
3/1/2019	357	3.2	ND	0.0500	ND	0.1250	0.2570	0.2570	0.4270	0.4270	0.1600	0.1600
3/7/2019	113	4.2	*	*	*	*	*	*	*	*	*	*
3/13/2019	140	9.4	ND	0.0500	ND	0.1250	0.1380	0.1380	ND	0.0500	ND	0.0500
3/19/2019	57	6.7	*	*	*	*	*	*	*	*	*	*
3/25/2019	142	3.2	*	*	*	*	*	*	*	*	*	*
3/31/2019	337	6.4	*	*	*	*	*	*	*	*	*	*

	ETHYLENE		1,3 BUTADIENE		BENZENE		VINYL CHLORIDE		ETHYLENE DICHLORIDE	
	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)
Year-To-Date Sum	1.2200	3.5700	0.9560	6.7060	9.8720	10.2220	12.6470	14.3470	13.7170	14.8170
Rolling Year Average	0.0254	0.0744	0.0199	0.1397	0.2057	0.2130	0.2635	0.2989	0.2858	0.3087
Annual Average	0.0000	0.0500	0.0684	0.1809	0.1955	0.2005	0.1105	0.1455	0.0949	0.1299
Number of theoretical sample periods	60	60	60	60	60	60	60	60	60	60
Number of non operational sample periods	12	12	12	12	12	12	12	12	12	12

* - non operational, data from the North site was used for Wind Direction and Wind Speed, if available

TCEQ Air Monitoring Comparison Values (ppb)			Investigation
Chemical	ST	LT	Limit (ppb)
Vinyl Chloride	27,000	0.47	25
Ethylene Dichloride	94	0.72	29.7
Benzene	180	1.4	28.2
Ethylene	500,000	30	500
1, 3 Butadiene	1,700	9	25

FORMOSA VOC CANISTER ANALYSIS
1st QUARTER 2019
POINT COMFORT - FORMOSA TRAINING COMPLEX
DUPLICATE SAMPLE SCHEDULE

SAMPLE DATE	AVG.WIND DIRECTION (Degrees)	AVG.WIND SPEED (mph)	ETHYLENE		1,3 BUTADIENE		BENZENE		VINYL CHLORIDE		ETHYLENE DICHLORIDE	
			Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)
07/22/18	176	5.7	ND	0.0500	ND	0.1250	0.1080	0.1080	ND	0.0500	0.1330	0.1330
07/22/18d	176	5.7	ND	0.0500	ND	0.1250	0.1190	0.1190	ND	0.0500	0.1490	0.1490
Relative Percent Difference (RPD)			ND		ND		-9.6916		ND		-11.3475	
08/09/18	138	5.6	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	0.1350	0.1350
08/09/18d	138	5.6	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	0.1750	0.1750
Relative Percent Difference (RPD)			ND		ND		ND		ND		-25.8065	
09/12/18	60	4.6	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	0.1140	0.1140
09/12/18d	60	4.6	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	0.1130	0.1130
Relative Percent Difference (RPD)			ND		ND		ND		ND		0.8811	
10/18/18	343	4.9	1.2200	1.2200	ND	0.1250	0.5310	0.5310	1.3900	1.3900	ND	0.0500
10/18/18d	343	4.9	0.5900	0.5900	ND	0.1250	0.4390	0.4390	1.3400	1.3400	ND	0.0500
Relative Percent Difference (RPD)			69.6133		ND		18.9691		3.6630		ND	
01/06/19	118	5.8	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
01/06/19d	118	5.8	ND	0.0500	ND	0.1250	0.3830	0.3830	ND	0.0500	ND	0.0500
Relative Percent Difference (RPD)			ND		ND		-153.8106		ND		ND	
02/05/19	125	5.9	ND	0.0500	0.6840	0.6840	0.1170	0.1170	ND	0.0500	ND	0.0500
02/05/19d	125	5.9	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
Relative Percent Difference (RPD)			ND		138.1953		80.2395		ND		ND	

d - Duplicate sample taken in addition to the routine sample (See Calculation Methodology for information on inclusion of duplicate sample results.)

* - non operational, data from the North site was used for Wind Direction and Wind Speed, if available

FORMOSA VOC CANISTER ANALYSIS
1st QUARTER 2019
POINT COMFORT - PARK SITE

SAMPLE DATE	AVG.WIND DIRECTION (Degrees)	AVG.WIND SPEED (mph)	ETHYLENE		1,3 BUTADIENE		BENZENE		VINYL CHLORIDE		ETHYLENE DICHLORIDE	
			Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)
4/5/2018	96	5.6	ND	0.0500	ND	0.1250	0.2170	0.2170	1.3200	1.3200	1.2200	1.2200
4/11/2018	114	4.4	ND	0.0500	ND	0.1250	0.5800	0.5800	1.4100	1.4100	1.1100	1.1100
4/17/2018	144	9.7	ND	0.0500	ND	0.1250	0.2230	0.2230	ND	0.0500	ND	0.0500
4/23/2018	243	1.2	ND	0.0500	ND	0.1250	0.5180	0.5180	0.3960	0.3960	ND	0.0500
4/29/2018	106	5.5	ND	0.0500	ND	0.1250	0.2900	0.2900	ND	0.0500	0.1550	0.1550
5/5/2018	320	3.5	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
5/11/2018	122	9.1	ND	0.0500	ND	0.1250	0.1190	0.1190	ND	0.0500	ND	0.0500
5/17/2018	159	6.0	ND	0.0500	ND	0.2500	0.1250	0.1250	ND	0.0500	ND	0.0500
5/23/2018	96	5.2	*	*	*	*	*	*	*	*	*	*
5/29/2018	144	5.2	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	0.1840	0.1840
6/4/2018	169	4.4	ND	0.0500	ND	0.1250	0.1130	0.1130	0.1540	0.1540	0.1630	0.1630
6/10/2018	140	8.8	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	0.1360	0.1360
6/16/2018	114	8.9	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
6/22/2018	151	4.9	ND	0.0500	ND	0.1250	0.1380	0.1380	ND	0.0500	0.2250	0.2250
6/28/2018	143	7.0	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
7/4/2018	126	7.1	ND	0.0500	ND	0.1250	0.3940	0.3940	1.0300	1.0300	ND	0.0500
7/10/2018	121	4.6	ND	0.0500	ND	0.1250	0.1750	0.1750	ND	0.0500	ND	0.0500
7/16/2018	153	5.9	ND	0.0500	ND	0.1250	0.1600	0.1600	ND	0.0500	0.1010	0.1010
7/22/2018	176	5.7	ND	0.0500	ND	0.1250	0.1020	0.1020	ND	0.0500	ND	0.0500
7/28/2018	133	4.0	ND	0.0500	ND	0.1250	0.2490	0.2490	0.2380	0.2380	0.6500	0.6500
8/3/2018	107	4.1	ND	0.0500	ND	0.1250	0.3470	0.3470	1.1700	1.1700	0.6730	0.6730
8/9/2018	138	5.6	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
8/17/2018	135	6.0	ND	0.0500	ND	0.1250	0.1150	0.1150	ND	0.0500	ND	0.0500
8/21/2018	155	5.4	ND	0.0500	ND	0.2500	ND	0.0500	ND	0.0500	ND	0.0500
8/29/2018	121	4.3	ND	0.0500	ND	0.1250	0.1940	0.1940	ND	0.0500	0.1040	0.1040
9/6/2018	91	1.8	ND	0.0500	ND	0.1250	0.1080	0.1080	0.3670	0.3670	0.1590	0.1590
9/12/2018	60	4.6	*	*	*	*	*	*	*	*	*	*
9/18/2018	187	1.3	ND	0.0500	ND	0.1250	0.5080	0.5080	ND	0.0500	0.3570	0.3570
9/24/2018	115	4.5	*	*	*	*	*	*	*	*	*	*
9/30/2018	65	2.2	*	*	*	*	*	*	*	*	*	*
10/6/2018	126	7.1	*	*	*	*	*	*	*	*	*	*
10/12/2018	88	5.1	ND	0.0500	ND	0.1250	0.2730	0.2730	2.7200	2.7200	7.3000	7.3000
10/18/2018	343	4.9	0.5680	0.5680	ND	0.1250	0.8150	0.8150	2.0600	2.0600	0.1260	0.1260
10/26/2018	249	1.5	0.5910	0.5910	ND	0.1250	0.2160	0.2160	ND	0.0500	ND	0.0500
11/1/2018	324	6.2	ND	0.0500	ND	0.1250		0.0000	0.2380	0.2380	0.6500	0.6500
11/7/2018	157	4.8	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
11/13/2018	321	7.6	ND	0.0500	ND	0.1250	0.1430	0.1430	ND	0.0500	ND	0.0500
11/17/2018	88	4.5	*	*	*	*	*	*	*	*	*	*
11/25/2018	316	3.0	ND	0.0500	ND	0.1250	0.4350	0.4350	0.4050	0.4050	0.7780	0.7780
12/1/2018	240	2.7	ND	0.0500	ND	0.1250	0.1660	0.1660	ND	0.0500	ND	0.0500
12/7/2018	102	1.9	ND	0.0500	ND	0.1250	0.2060	0.2060	ND	0.0500	ND	0.0500
12/13/2018	235	6.7	ND	0.0500	ND	0.1250	0.1180	0.1180	ND	0.0500	ND	0.0500
12/19/2018	15	1.7	ND	0.0500	ND	0.1250	0.2070	0.2070	0.3010	0.3010	0.9900	0.9900
12/25/2018	106	5.9	ND	0.0500	ND	0.1250	0.1430	0.1430	ND	0.0500	ND	0.0500
12/31/2018	254	3.2	ND	0.0500	ND	0.1250	0.2350	0.2350	ND	0.0500	ND	0.0500

FORMOSA VOC CANISTER ANALYSIS
1st QUARTER 2019
POINT COMFORT - PARK SITE

SAMPLE DATE	AVG.WIND DIRECTION (Degrees)	AVG.WIND SPEED (mph)	ETHYLENE		1,3 BUTADIENE		BENZENE		VINYL CHLORIDE		ETHYLENE DICHLORIDE	
			Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)
1/6/2019	118	5.8	ND	0.0500	ND	0.0500	0.1870	0.1870	ND	0.0500	ND	0.0500
1/12/2019	307	4.4	ND	0.0500	ND	0.1250	0.2620	0.2620	ND	0.0500	ND	0.0500
1/18/2019	144	5.2	ND	0.0500	ND	0.1250	0.3480	0.3480	ND	0.0500	ND	0.0500
1/24/2019	90	5.1	ND	0.0500	ND	0.1250	0.1410	0.1410	ND	0.0500	0.2460	0.2460
1/30/2019	42	7.8	ND	0.0500	ND	0.1250	0.3540	0.3540	0.5180	0.5180	0.9420	0.9420
2/5/2019	125	5.9	ND	0.0500	ND	0.1250	0.2940	0.2940	1.3600	1.3600	0.2840	0.2840
2/11/2019	140	2.2	ND	0.0500	ND	0.1250	0.2020	0.2020	ND	0.0500	ND	0.0500
2/17/2019	336	5.3	0.3030	0.3030	0.512	0.5120	ND	0.0500	ND	0.0500	ND	0.0500
2/23/2019	197	1.2	*	*	*	*	*	*	*	*	*	*
3/1/2019	357	3.2	ND	0.0500	ND	0.1250	0.2080	0.2080	0.3860	0.3860	0.3250	0.3250
3/7/2019	113	4.2	*	*	*	*	*	*	*	*	*	*
3/13/2019	140	9.4	ND	0.0500	ND	0.1250	0.1750	0.1750	ND	0.0500	ND	0.0500
3/19/2019	57	6.7	*	*	*	*	*	*	*	*	*	*
3/25/2019	142	3.2	*	*	*	*	*	*	*	*	*	*
3/31/2019	337	6.4	*	*	*	*	*	*	*	*	*	*

	ETHYLENE		1,3 BUTADIENE		BENZENE		VINYL CHLORIDE		ETHYLENE DICHLORIDE	
	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)
Year-To-Date Sum	1.4620	3.7620	0.5120	6.6870	9.8030	10.2530	14.0730	15.7230	16.8780	18.2280
Rolling Year Average	0.0298	0.0768	0.0104	0.1365	0.2001	0.2092	0.2872	0.3209	0.3444	0.3720
Annual Average	0.0303	0.0753	0.0512	0.1562	0.2171	0.2221	0.2264	0.2614	0.1797	0.2097
Number of theoretical sample periods	60	60	60	60	60	60	60	60	60	60
Number of non operational sample periods	11	11	11	11	11	11	11	11	11	11

* - non operational, data from the North site was used for Wind Direction and Wind Speed, if available

TCEQ Air Monitoring Comparison Values (ppb)			Investigation
Chemical	ST	LT	Limit (ppb)
Vinyl Chloride	27,000	0.47	25
Ethylene Dichloride	94	0.72	29.7
Benzene	180	1.4	28.2
Ethylene	500,000	30	500
1, 3 Butadiene	1,700	9	25

FORMOSA VOC CANISTER ANALYSIS
1st QUARTER 2019
POINT COMFORT - PARK SITE
DUPLICATE SAMPLE SCHEDULE

SAMPLE DATE	AVG.WIND DIRECTION (Degrees)	AVG.WIND SPEED (mph)	ETHYLENE		1,3 BUTADIENE		BENZENE		VINYL CHLORIDE		ETHYLENE DICHLORIDE	
			Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)
07/28/18	133	4.0	ND	0.0500	ND	0.1250	0.2490	0.2490	0.2380	0.2380	0.6500	0.6500
07/28/18$_d$	133	4.0	ND	0.0500	ND	0.1250	0.2500	0.2500	0.2350	0.2350	0.6380	0.6380
Relative Percent Difference (RPD)			ND		ND		-0.4008		1.2685		1.8634	
08/29/18	121	4.3	ND	0.0500	ND	0.1250	0.1940	0.1940	ND	0.0500	0.1040	0.1040
08/29/18$_d$	121	4.3	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	0.1080	0.1080
Relative Percent Difference (RPD)			ND		ND		118.0328		ND		-3.7736	
09/18/18	187	1.3	ND	0.0500	ND	0.1250	0.5080	0.5080	ND	0.0500	0.3570	0.3570
09/18/18$_d$	187	1.3	ND	0.0500	ND	0.1250	0.5940	0.5940	ND	0.0500	0.2820	0.2820
Relative Percent Difference (RPD)			ND		ND		-15.6080		ND		23.4742	
10/14/18	123	7.0	ND	0.0500	ND	0.1250	0.2730	0.2730	2.7200	2.7200	7.3000	7.3000
10/14/18$_d$	123	7.0	*	*	*	*	*	*	*	*	*	*
Relative Percent Difference (RPD)			*		*		*		*		*	
12/07/18	102	1.9	ND	0.0500	ND	0.1250	0.2060	0.2060	ND	0.0500	ND	0.0500
12/07/18$_d$	102	1.9	*	*	*	*	*	*	*	*	*	*
Relative Percent Difference (RPD)			*		*		*		*		*	
02/11/19	140	2.2	ND	0.0500	ND	0.1250	0.2020	0.2020	ND	0.0500	ND	0.0500
02/11/19$_d$	140	2.2	ND	0.0500	ND	0.1250	0.2200	0.2200	0.1040	0.1040	0.1290	0.1290
Relative Percent Difference (RPD)			ND		ND		-8.5308		-70.1299		-88.2682	

d - Duplicate sample taken in addition to the routine sample (See Calculation Methodology for information on inclusion of duplicate sample results.)

* - non operational, data from the North site was used for Wind Direction and Wind Speed, if available

FORMOSA VOC CANISTER ANALYSIS
1st QUARTER 2019
PC PLANT SITE

SAMPLE DATE	AVG.WIND DIRECTION (Degrees)	AVG.WIND SPEED (mph)	ETHYLENE		1,3 BUTADIENE		BENZENE		VINYL CHLORIDE		ETHYLENE DICHLORIDE	
			Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)
4/1/2018	126	8.6	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
4/3/2018	140	7.3	ND	0.0500	ND	0.1250	0.1130	0.1130	ND	0.0500	ND	0.0500
4/5/2018	96	5.6	ND	0.0500	ND	0.1250	0.1540	0.1540	1.0500	1.0500	1.2200	1.2200
4/7/2018	331	4.7	ND	0.0500	ND	0.1250	0.2520	0.2520	0.1070	0.1070	ND	0.0500
4/9/2018	32	5.1	2.5800	2.5800	ND	0.1250	ND	0.0500	4.9200	4.9200	2.4400	2.4400
4/11/2018	114	4.4	ND	0.0500	ND	0.1250	0.2320	0.2320	0.2140	0.2140	0.4920	0.4920
4/13/2018	142	10.2	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
4/15/2018	305	3.0	ND	0.0500	ND	0.1250	0.3520	0.3520	0.1640	0.1640	ND	0.0500
4/17/2018	144	9.7	ND	0.5000	ND	0.1250	0.1650	0.1650	ND	0.0500	ND	0.0500
4/19/2018	48	3.3	ND	0.0500	ND	0.1250	0.6060	0.6060	0.4210	0.4210	0.1940	0.1940
4/21/2018	108	6.4	ND	0.0500	ND	0.1250	0.1840	0.1840	ND	0.0500	ND	0.0500
4/23/2018	243	1.2	ND	0.0500	ND	0.1250	0.2550	0.2550	2.1000	2.1000	0.3550	0.3550
4/25/2018	124	3.5	ND	0.0500	ND	0.1250	0.3300	0.3300	0.1980	0.1980	0.1260	0.1260
4/27/2018	336	2.2	ND	0.0500	ND	0.1250	0.5380	0.5380	2.2300	2.2300	0.2050	0.2050
4/29/2018	106	5.5	*	*	*	*	*	*	*	*	*	*
5/1/2018	113	9.8	ND	0.0500	ND	0.1250	0.1050	0.1050	ND	0.0500	ND	0.0500
5/3/2018	125	9.9	ND	0.0500	ND	0.1250	0.1230	0.1230	ND	0.0500	ND	0.0500
5/5/2018	320	3.5	ND	0.0500	ND	0.1250	0.2280	0.2280	ND	0.0500	ND	0.0500
5/7/2018	166	2.7	ND	0.0500	ND	0.1250	0.1160	0.1160	ND	0.0500	ND	0.0500
5/9/2018	126	6.5	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
5/11/2018	122	9.1	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
5/13/2018	115	7.9	*	*	*	*	*	*	*	*	*	*
5/15/2018	125	5.6	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
5/17/2018	159	6.0	ND	0.0500	ND	0.1250	0.1320	0.1320	ND	0.0500	ND	0.0500
5/19/2018	121	10.1	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
5/21/2018	117	3.9	ND	0.0500	ND	0.1250	0.1520	0.1520	0.3580	0.3580	0.8050	0.8050
5/23/2018	96	5.2	*	*	*	*	*	*	*	*	*	*
5/25/2018	149	3.0	ND	0.0500	ND	0.1250	0.1160	0.1160	ND	0.0500	ND	0.0500
5/27/2018	146	4.9	*	*	*	*	*	*	*	*	*	*
5/29/2018	144	5.2	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	0.1290	0.1290
5/31/2018	128	8.8	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
6/2/2018	148	6.7	ND	0.0500	ND	0.1250	0.1020	0.1020	ND	0.0500	0.1390	0.1390
6/4/2018	169	4.4	ND	0.0500	ND	0.1250	0.1170	0.1170	0.1750	0.1750	0.1230	0.1230
6/6/2018	137	6.7	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
6/8/2018	121	7.2	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
6/10/2018	140	8.8	ND	0.0500	ND	0.1250	0.1930	0.1930	ND	0.0500	ND	0.0500
6/12/2018	126	8.8	ND	0.0500	ND	0.1250	0.1120	0.1120	ND	0.0500	ND	0.0500
6/14/2018	122	6.9	ND	0.0500	ND	0.1250	0.1490	0.1490	ND	0.0500	ND	0.0500
6/16/2018	114	8.9	*	*	*	*	*	*	*	*	*	*
6/18/2018	99	4.8	ND	0.0500	ND	0.1250	0.1120	0.1120	0.6960	0.6960	1.8400	1.8400
6/20/2018	105	5.3	ND	0.0500	ND	0.1250	0.1230	0.1230	0.3960	0.3960	0.6200	0.6200
6/22/2018	151	4.9	ND	0.0500	ND	0.1250	0.1560	0.1560	ND	0.0500	0.1030	0.1030
6/24/2018	131	8.8	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
6/26/2018	123	7.5	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
6/28/2018	143	7.0	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
6/30/2018	137	8.3	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
7/2/2018	140	5.3	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
7/4/2018	130	2.8	ND	0.5000	ND	1.2500	ND	0.5000	ND	0.5000	10.3000	10.3000
7/6/2018	208	0.7	ND	0.0500	ND	0.1250	0.3180	0.3180	0.1040	0.1040	0.3430	0.3430
7/8/2018	161	2.8	ND	0.0500	ND	0.1250	0.1930	0.1930	ND	0.0500	ND	0.0500
7/10/2018	121	4.6	ND	0.0500	ND	0.1250	0.3650	0.3650	ND	0.0500	ND	0.0500

FORMOSA VOC CANISTER ANALYSIS
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PC PLANT SITE

SAMPLE DATE	AVG.WIND DIRECTION (Degrees)	AVG.WIND SPEED (mph)	ETHYLENE		1,3 BUTADIENE		BENZENE		VINYL CHLORIDE		ETHYLENE DICHLORIDE	
			Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)
7/12/2018	146	4.3	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
7/14/2018	138	6.1	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
7/16/2018	153	5.9	ND	0.0500	ND	0.1250	0.1080	0.1080	ND	0.0500	ND	0.0500
7/18/2018	164	5.6	ND	0.5000	ND	0.1250	0.1850	0.1850	ND	0.0500	ND	0.0500
7/20/2018	163	5.9	ND	0.0500	ND	0.1250	0.4950	0.4950	ND	0.0500	0.1720	0.1720
7/22/2018	176	5.7	ND	0.0500	ND	0.1250	0.4890	0.4890	ND	0.0500	0.1090	0.1090
7/24/2018	145	3.7	ND	0.0500	ND	0.1250	0.1390	0.1390	ND	0.0500	ND	0.0500
7/26/2018	143	3.1	ND	0.0500	ND	0.1250	0.2550	0.2550	ND	0.0500	0.1000	0.1000
7/28/2018	133	4.0	ND	0.0500	ND	0.1250	0.1870	0.1870	ND	0.0500	0.1050	0.1050
7/30/2018	156	3.9	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
8/1/2018	129	1.1	ND	0.0500	ND	0.1250	0.3900	0.3900	1.2300	1.2300	0.3580	0.3580
8/3/2018	107	4.1	ND	0.0500	ND	0.1250	0.3420	0.3420	0.7380	0.7380	1.2800	1.2800
8/5/2018	101	6.5	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
8/7/2018	122	6.2	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
8/9/2018	138	5.6	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	0.1170	0.1170
8/11/2018	149	4.1	*	*	*	*	*	*	*	*	*	*
8/13/2018	134	7.7	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
8/15/2018	142	6.5	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
8/17/2018	135	6.0	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
8/19/2018	158	7.4	*	*	*	*	*	*	*	*	*	*
8/21/2018	155	5.4	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
8/23/2018	136	3.9	*	*	*	*	*	*	*	*	*	*
8/25/2018	125	5.9	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
8/27/2018	124	6.9	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
8/29/2018	121	4.3	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	0.1120	0.1120
8/31/2018	106	4.0	*	*	*	*	*	*	*	*	*	*
9/2/2018	106	2.1	ND	0.0500	ND	0.1250	ND	0.0500	0.1700	0.1700	0.3080	0.3080
9/4/2018	69	4.6	ND	0.0500	ND	0.1250	0.1090	0.1090	1.6600	1.6600	1.9400	1.9400
9/6/2018	91	1.8	ND	0.0500	ND	0.1250	0.1680	0.1680	0.6980	0.6980	0.6670	0.6670
9/8/2018	120	4.8	ND	0.0500	ND	0.1250	0.1760	0.1760	0.1070	0.1070	0.1150	0.1150
9/10/2018	40	3.7	ND	0.0500	ND	0.1250	0.1080	0.1080	1.5300	1.5300	3.5800	3.5800
9/12/2018	60	4.6	ND	0.0500	ND	0.1250	0.1600	0.1600	2.0500	2.0500	3.3800	3.3800
9/14/2018	41	6.1	ND	0.0500	ND	0.1250	0.1550	0.1550	2.1800	2.1800	5.1700	5.1700
9/16/2018	122	1.9	ND	0.0500	ND	0.1250	0.2860	0.2860	0.5470	0.5470	0.8670	0.8670
9/18/2018	187	1.3	ND	0.0500	ND	0.1250	0.1320	0.1320	ND	0.0500	0.1420	0.1420
9/20/2018	121	5.9	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
9/22/2018	204	2.9	ND	0.0500	ND	0.1250	0.1510	0.1510	ND	0.0500	ND	0.0500
9/24/2018	115	4.5	ND	0.0500	ND	0.1250	0.1780	0.1780	ND	0.0500	ND	0.0500
9/26/2018	132	2.4	ND	0.0500	ND	0.1250	0.1510	0.1510	0.4270	0.4270	0.8060	0.8060
9/28/2018	62	2.9	ND	0.0500	ND	0.1250	ND	0.0500	1.6100	1.6100	1.9400	1.9400
9/30/2018	65	2.2	ND	0.0500	ND	0.1250	0.2190	0.2190	2.1300	2.1300	2.8200	2.8200
10/2/2018	92	4.7	ND	0.0500	ND	0.1250	ND	0.0500	1.2900	1.2900	2.1200	2.1200
10/4/2018	111	4.8	ND	0.5000	ND	1.2500	1.0900	1.0900	ND	0.5000	ND	0.0500
10/6/2018	112	6.2	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
10/8/2018	108	7.8	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
10/10/2018	344	3.8	ND	0.0500	ND	0.1250	0.7510	0.7510	0.9960	0.9960	0.9980	0.9980
10/12/2018	88	5.1	ND	0.0500	ND	0.1250	0.4150	0.4150	5.0600	5.0600	17.7000	17.7000
10/14/2018	123	7.0	ND	0.0500	ND	0.1250	0.2210	0.2210	ND	0.0500	ND	0.0500
10/16/2018	317	6.3	ND	0.0500	ND	0.1250	0.2080	0.2080	ND	0.0500	ND	0.0500
10/18/2018	343	4.9	ND	0.5000	ND	0.1250	0.6560	0.6560	1.0100	1.0100	ND	0.0500
10/20/2018	345	6.8	ND	0.0500	ND	0.1250	0.3600	0.3600	1.2300	1.2300	ND	0.0500

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1st QUARTER 2019
PC PLANT SITE

SAMPLE DATE	AVG.WIND DIRECTION (Degrees)	AVG.WIND SPEED (mph)	ETHYLENE		1,3 BUTADIENE		BENZENE		VINYL CHLORIDE		ETHYLENE DICHLORIDE	
			Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)
10/22/2018	351	4.8	ND	0.0500	ND	0.1250	0.3050	0.3050	4.7800	4.7800	0.1290	0.1290
10/24/2018	5	3.9	*	*	*	*	*	*	*	*	*	*
10/26/2018	249	1.5	ND	0.0500	ND	0.1250	0.2520	0.2520	0.6970	0.6970	ND	0.0500
10/28/2018	179	2.8	ND	0.0500	ND	0.1250	0.2960	0.2960	ND	0.0500	ND	0.0500
10/30/2018	137	6.6	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
11/1/2018	324	6.2	ND	0.0500	ND	0.1250	0.2610	0.2610	1.0300	1.0300	ND	0.0500
11/3/2018	136	6.7	0.3310	0.3310	ND	0.1250	0.1010	0.1010	ND	0.0500	ND	0.0500
11/5/2018	158	4.9	0.3430	0.3430	ND	0.1250	0.1660	0.1660	0.4450	0.4450	0.7320	0.7320
11/7/2018	157	4.8	0.3760	0.3760	ND	0.1250	0.1450	0.1450	ND	0.0500	ND	0.0500
11/9/2018	348	10.2	ND	0.0500	0.2930	0.2930	0.7920	0.7920	1.3200	1.3200	0.3510	0.3510
11/11/2018	24	6.2	ND	0.0500	ND	0.1250	0.4330	0.4330	0.8340	0.8340	0.3180	0.3180
11/13/2018	321	7.6	ND	0.0500	ND	0.1250	0.2450	0.2450	0.1040	0.1040	ND	0.0500
11/15/2018	112	2.9	ND	0.0500	ND	0.1250	0.3090	0.3090	0.7050	0.7050	0.8120	0.8120
11/17/2018	88	4.5	*	*	*	*	*	*	*	*	*	*
11/19/2018	344	7.0	*	*	*	*	*	*	*	*	*	*
11/21/2018	22	4.8	ND	0.0500	ND	0.1250	0.4500	0.4500	1.3400	1.3400	1.0700	1.0700
11/23/2018	46	0.4	*	*	*	*	*	*	*	*	*	*
11/25/2018	316	3.0	ND	0.0500	ND	0.1250	0.2050	0.2050	ND	0.0500	ND	0.0500
11/27/2018	85	1.9	ND	0.0500	ND	0.1250	0.2100	0.2100	ND	0.0500	ND	0.0500
11/29/2018	145	3.2	ND	0.0500	0.2780	0.2780	0.1770	0.1770	ND	0.0500	0.3070	0.3070
12/1/2018	240	2.7	ND	0.0500	ND	0.1250	0.1930	0.1930	ND	0.0500	0.1400	0.1400
12/3/2018	348	5.8	ND	0.0500	0.2780	0.2780	0.8490	0.8490	0.6290	0.6290	0.6660	0.6660
12/5/2018	46	5.0	ND	0.0500	ND	0.1250	0.3790	0.3790	1.8800	1.8800	5.1400	5.1400
12/7/2018	102	1.9	ND	0.0500	ND	0.1250	0.3240	0.3240	0.1260	0.1260	0.2680	0.2680
12/9/2018	323	6.4	*	*	*	*	*	*	*	*	*	*
12/11/2018	101	3.0	ND	0.0500	ND	0.1250	0.2460	0.2460	0.1050	0.1050	0.3330	0.3330
12/13/2018	235	6.7	ND	0.0500	ND	0.1250	0.1550	0.1550	ND	0.0500	ND	0.0500
12/15/2018	284	5.4	*	*	*	*	*	*	*	*	*	*
12/17/2018	129	1.7	ND	0.0500	ND	0.1250	0.5460	0.5460	ND	0.0500	0.2160	0.2160
12/19/2018	15	1.7	ND	0.0500	ND	0.1250	0.2210	0.2210	0.5950	0.5950	3.3900	3.3900
12/21/2018	240	3.0	ND	0.0500	ND	0.1250	0.2790	0.2790	ND	0.0500	0.2230	0.2230
12/23/2018	323	3.2	ND	0.0500	0.2910	0.2910	0.7380	0.7380	0.4220	0.4220	ND	0.0500
12/25/2018	106	5.9	ND	0.0500	ND	0.1250	0.2070	0.2070	0.1530	0.1530	0.8980	0.8980
12/27/2018	128	1.7	ND	0.0500	ND	0.1250	0.2390	0.2390	0.3100	0.3100	1.5000	1.5000
12/29/2018	346	8.6	ND	0.0500	ND	0.1250	0.2920	0.2920	0.3400	0.3400	ND	0.0500
12/31/2018	254	3.2	0.7080	0.7080	ND	0.1250	0.3200	0.3200	ND	0.0500	ND	0.0500
1/2/2019	350	6.8	ND	0.5000	ND	0.1250	0.4050	0.4050	0.5250	0.5250	0.2550	0.2550
1/4/2019	229	2.0	ND	0.0500	ND	0.1250	0.1340	0.1340	ND	0.0500	ND	0.0500
1/6/2019	118	5.8	ND	0.0500	ND	0.1250	0.1340	0.1340	ND	0.0500	ND	0.0500
1/8/2019	153	1.4	ND	0.0500	ND	0.1250	0.1680	0.1680	ND	0.0500	0.1360	0.1360
1/10/2019	68	4.4	ND	0.0500	ND	0.1250	0.4450	0.4450	1.1300	1.1300	2.9000	2.9000
1/12/2019	307	4.4	ND	0.0500	ND	0.1250	0.3010	0.3010	0.2240	0.2240	0.1370	0.1370
1/14/2019	342	4.9	ND	0.0500	ND	0.1250	0.3140	0.3140	0.5830	0.5830	ND	0.0500
1/16/2019	85	5.8	ND	0.5000	ND	0.1250	0.1990	0.1990	0.2050	0.2050	1.2000	1.2000
1/18/2019	144	5.2	ND	0.0500	ND	0.1250	0.2540	0.2540	ND	0.0500	ND	0.0500
1/20/2019	325	2.6	ND	0.0500	ND	0.1250	0.1960	0.1960	ND	0.0500	0.1400	0.1400
1/22/2019	137	8.5	*	*	*	*	*	*	*	*	*	*
1/24/2019	90	5.1	*	*	*	*	*	*	*	*	*	*
1/26/2019	63	5.3	ND	0.0500	ND	0.1250	0.2390	0.2390	1.1400	1.1400	4.4100	4.4100
1/28/2019	169	4.7	ND	0.0500	ND	0.1250	0.2250	0.2250	ND	0.0500	0.2600	0.2600
1/30/2019	42	7.8	2.7300	2.7300	ND	0.1250	ND	0.0500	0.5350	0.5350	2.7300	2.7300

FORMOSA VOC CANISTER ANALYSIS
1st QUARTER 2019
PC PLANT SITE

SAMPLE DATE	AVG.WIND DIRECTION (Degrees)	AVG.WIND SPEED (mph)	ETHYLENE		1,3 BUTADIENE		BENZENE		VINYL CHLORIDE		ETHYLENE DICHLORIDE	
			Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)
2/1/2019	58	5.5	*	*	*	*	*	*	*	*	*	*
2/3/2019	121	3.9	ND	0.0500	1.1800	1.1800	0.2700	0.2700	ND	0.0500	ND	0.0500
2/5/2019	125	5.9	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
2/7/2019	13	3.9	ND	0.0500	ND	0.1250	0.4920	0.4920	0.1640	0.1640	ND	0.0500
2/9/2019	353	6.8	0.2530	0.2530	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
2/11/2019	140	2.2	ND	0.0500	3.5000	3.5000	0.2920	0.2450	ND	0.0500	0.1540	0.1540
2/13/2019	90	4.6	*	*	*	*	*	*	*	*	*	*
2/15/2019	180	6.3	*	*	*	*	*	*	*	*	*	*
2/17/2019	336	5.3	*	*	*	*	*	*	*	*	*	*
2/19/2019	354	6.0	*	*	*	*	*	*	*	*	*	*
2/21/2019	355	4.7	ND	0.0500	ND	0.1250	0.4010	0.4010	0.3090	0.3090	0.1800	0.1800
2/23/2019	197	1.2	ND	0.0500	ND	0.1250	0.3310	0.3310	0.8750	0.8750	0.2080	0.2080
2/25/2019	49	7.8	3.1100	3.1100	ND	0.1250	ND	0.0500	0.6300	0.6300	3.4600	3.4600
2/27/2019	130	3.3	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
3/1/2019	357	3.2	ND	0.0500	ND	0.1250	0.4400	0.4400	0.9490	0.9490	0.8860	0.8860
3/3/2019	342	8.2	*	*	*	*	*	*	*	*	*	*
3/5/2019	340	7.2	ND	0.0500	ND	0.1250	0.3260	0.3260	0.3800	0.3800	ND	0.0500
3/7/2019	113	4.2	ND	0.0500	ND	0.1250	0.1820	0.1820	ND	0.0500	ND	0.0500
3/9/2019	131	6.4	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
3/11/2019	83	6.6	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
3/13/2019	140	9.4	2.4200	2.4200	ND	0.0500	0.1120	0.1120	0.1020	0.1020	0.1870	0.1870
3/15/2019	340	8.0	ND	0.0500	ND	0.1250	0.2820	0.2820	0.3870	0.3870	ND	0.0500
3/17/2019	65	1.5	ND	0.0500	ND	0.0500	0.2220	0.2220	0.1030	0.1030	0.2130	0.2130
3/19/2019	57	6.7	6.8400	6.8400	ND	0.0500	0.2600	0.2600	0.7420	0.7420	2.0000	2.0000
3/21/2019	100	2.8	16.7000	16.7000	ND	0.0500	0.4200	0.4200	0.6240	0.6240	1.3500	1.3500
3/23/2019	109	8.1	*	*	*	*	*	*	*	*	*	*
3/25/2019	142	3.2	*	*	*	*	*	*	*	*	*	*
3/27/2019	90	5.4	*	*	*	*	*	*	*	*	*	*
3/29/2019	119	8.3	*	*	*	*	*	*	*	*	*	*
3/31/2019	337	6.4	*	*	*	*	*	*	*	*	*	*

	ETHYLENE		1,3 BUTADIENE		BENZENE		VINYL CHLORIDE		ETHYLENE DICHLORIDE	
	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)
Year-To-Date Sum	36.3910	46.7410	5.8200	26.3950	30.7560	33.3590	63.2180	68.4680	101.6390	105.6890
Rolling Year Average	0.2348	0.3016	0.0375	0.1703	0.1984	0.2152	0.4079	0.4417	0.6557	0.6819
Annual Average	1.0017	1.0704	0.1463	0.2541	0.2201	0.2296	0.3002	0.3221	0.6502	0.6721
Number of theoretical sample periods	183	183	183	183	183	183	183	183	183	183
Number of non operational sample periods	28	28	28	28	28	28	28	28	28	28

* - non operational, data from the North site was used for Wind Direction and Wind Speed, if available

155.0000

TCEQ Air Monitoring Comparison Values (ppb)			Investigation
Chemical	ST	LT	Limit (ppb)
Vinyl Chloride	27,000	0.47	25
Ethylene Dichloride	94	0.72	29.7
Benzene	180	1.4	28.2
Ethylene	500,000	30	500
1, 3 Butadiene	1,700	9	25

FORMOSA VOC CANISTER ANALYSIS
1st QUARTER 2019
POINT COMFORT - PC SITE
DUPLICATE SAMPLE SCHEDULE

SAMPLE DATE	AVG.WIND DIRECTION (Degrees)	AVG.WIND SPEED (mph)	ETHYLENE		1,3 BUTADIENE		BENZENE		VINYL CHLORIDE		ETHYLENE DICHLORIDE	
			Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)
04/03/18	140	7.3	ND	0.0500	ND	0.1250	0.1130	0.1130				
04/03/18$_d$	140	7.3	ND	0.0500	ND	0.1250	0.1650	0.1650	ND	0.0500	ND	0.0500
Relative Percent Difference (RPD)			ND		ND		-37.4101		ND	0.0500	ND	0.0500
04/09/18	32	5.1	2.5800	2.5800	ND	0.1250	ND	0.0500	4.9200	4.9200	ND	
04/09/18$_d$	32	5.1	*	*	*	*	*	*	*	*	2.4400	2.4400
Relative Percent Difference (RPD)											*	*
04/17/18	144	9.7	ND	0.5000	ND	0.1250	0.1650	0.1650	ND	0.0500		
04/17/18$_d$	144	9.7	ND	0.5000	ND	0.1250	0.1180	0.1180	ND	0.0500	ND	0.0500
Relative Percent Difference (RPD)			ND		ND		33.2155		ND		ND	0.0500
04/21/18	108	6.4	ND	0.0500	ND	0.1250	0.1840	0.1840			ND	
04/21/18$_d$	108	6.4	ND	0.0500	ND	0.1250	0.1880	0.1880	ND	0.0500	ND	0.0500
Relative Percent Difference (RPD)			ND		ND		-2.1505		ND	0.0500	ND	0.0500
04/27/18	336	2.2	ND	0.0500	ND	0.1250	0.5380	0.5380				
04/27/18$_d$	336	2.2	ND	0.0500	ND	0.1250	0.5740	0.5740	2.2300	2.2300	0.2050	0.2050
Relative Percent Difference (RPD)			ND		ND		-6.4748		2.8200	2.8200	0.1990	0.1990
05/03/18	125	9.9	ND	0.0500	ND	0.1250	0.1230	0.1230	-23.3663		2.9703	
05/03/18$_d$	125	9.9	*	*	*	*	*	*	ND	0.0500	ND	0.0500
Relative Percent Difference (RPD)									*	*	*	*
05/11/18	122	9.1	ND	0.0500	ND	0.1250	ND	0.0500				
05/11/18$_d$	122	9.1	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
Relative Percent Difference (RPD)			ND		ND		ND		ND	0.0500	ND	0.0500
05/15/18	125	5.6	ND	0.0500	ND	0.1250	ND	0.0500			ND	
05/15/18$_d$	125	5.6	ND	0.0500	ND	0.1250	0.1410	0.1410	ND	0.0500	ND	0.0500
Relative Percent Difference (RPD)			ND		ND		-95.2880		ND	0.0500	ND	0.0500
05/31/18	128	8.8	ND	0.0500	ND	0.1250	ND	0.0500				
05/31/18$_d$	128	8.8	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
Relative Percent Difference (RPD)			ND		ND		ND		ND	0.0500	ND	0.0500
06/08/18	121	7.2	ND	0.0500	ND	0.1250	ND	0.0500				
06/08/18$_d$	121	7.2	ND	0.0500	ND	0.1250	0.1370	0.1370	ND	0.0500	ND	0.0500
Relative Percent Difference (RPD)			ND		ND		-93.0481		ND	0.0500	ND	2.0000
06/14/18	122	6.9	ND	0.0500	ND	0.1250	0.1490	0.1490				
06/14/18$_d$	122	6.9	ND	0.0500	ND	0.1250	0.1860	0.1860	ND	0.0500	ND	0.0500
Relative Percent Difference (RPD)			ND		ND		-22.0896		ND	0.0500	ND	0.0500
06/20/18	105	5.3	ND	0.0500	ND	0.1250	0.1230	0.1230				
06/20/18$_d$	105	5.3	*	*	*	*	*	*	0.3960	0.3960	0.6200	0.6200
Relative Percent Difference (RPD)									*	*	*	*
06/26/18	123	7.5	ND	0.0500	ND	0.1250	ND	0.0500				
06/26/18$_d$	123	7.5	ND	0.1000	ND	0.2500	ND	0.1000	ND	0.1000	ND	0.1000
Relative Percent Difference (RPD)			ND		ND		ND		ND	0.1000	ND	0.1000
07/04/18	130	2.8	ND	0.5000	ND	1.2500	ND	0.5000				
07/04/18$_d$	130	2.8	ND	0.5000	ND	1.2500	ND	0.5000	ND	0.5000	10.3000	10.3000
									ND	0.5000	9.4900	9.4900

FORMOSA VOC CANISTER ANALYSIS
1st QUARTER 2019
POINT COMFORT - PC SITE
DUPLICATE SAMPLE SCHEDULE

SAMPLE DATE	AVG.WIND DIRECTION (Degrees)	AVG.WIND SPEED (mph)	ETHYLENE		1,3 BUTADIENE		BENZENE		VINYL CHLORIDE		ETHYLENE DICHLORIDE	
			Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)
Relative Percent Difference (RPD)			ND		ND		ND		ND		8.1860	
07/08/18	161	2.8	ND	0.0500	ND	0.1250	0.1930	0.1930	ND	0.0500	ND	0.0500
07/08/18$_d$	161	2.8	*	*	*	*	*	*	*	*	*	*
Relative Percent Difference (RPD)												
07/14/18	138	6.1	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
07/14/18$_d$	138	6.1	ND	0.5000	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
Relative Percent Difference (RPD)			ND		ND		ND		ND		ND	
07/20/18	163	5.9	ND	0.0500	ND	0.1250	0.4950	0.4950	ND	0.0500	0.1720	0.1720
07/20/18$_d$	163	5.9	ND	0.0500	ND	0.1250	0.1070	0.1070	ND	0.0500	0.1370	0.1370
Relative Percent Difference (RPD)			ND		ND		128.9037		ND		22.6537	
07/26/18	143	3.1	ND	0.0500	ND	0.1250	0.2550	0.2550	ND	0.0500	0.1000	0.1000
07/26/18$_d$	143	3.1	ND	0.1000	ND	0.2500	22.1000	22.1000	ND	0.1000	0.7510	0.7510
Relative Percent Difference (RPD)			ND		ND		-195.4373		ND		-152.9965	
08/01/18	129	1.1	ND	0.0500	ND	0.1250	0.3900	0.3900	1.2300	1.2300	0.3580	0.3580
08/01/18$_d$	129	1.1	ND	0.0500	ND	0.1250	0.4900	0.4900	1.1100	1.1100	0.2890	0.2890
Relative Percent Difference (RPD)			ND		ND		-22.7273		10.2564		21.3292	
08/07/18	122	6.2	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
08/07/18$_d$	122	6.2	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
Relative Percent Difference (RPD)			ND		ND		ND		ND		ND	
08/15/18	142	6.5	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
08/15/18$_d$	142	6.5	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
Relative Percent Difference (RPD)			ND		ND		ND		ND		ND	
08/21/18	155	5.4	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
08/21/18$_d$	155	5.4	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
Relative Percent Difference (RPD)			ND		ND		ND		ND		ND	
08/25/18	125	5.9	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
08/25/18$_d$	125	5.9	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
Relative Percent Difference (RPD)			ND		ND		ND		ND		ND	
09/06/18	91	1.8	ND	0.0500	ND	0.1250	0.1680	0.1680	0.6980	0.6980	0.6670	0.6670
09/06/18$_d$	91	1.8	ND	0.0500	ND	0.1250	0.2100	0.2100	0.6580	0.6580	0.6510	0.6510
Relative Percent Difference (RPD)			ND		ND		-22.2222		5.8997		2.4279	
09/12/18	60	4.6	ND	0.0500	ND	0.1250	0.1600	0.1600	2.0500	2.0500	3.3800	3.3800
09/12/18$_d$	60	4.6	ND	0.0500	ND	0.1250	0.1050	0.1050	1.4900	1.4900	3.8400	3.8400
Relative Percent Difference (RPD)			ND		ND		41.5094		31.6384		-12.7424	
09/18/18	187	1.3	ND	0.0500	ND	0.1250	0.1320	0.1320	ND	0.0500	0.1420	0.1420
09/18/18$_d$	187	1.3	*	*	*	*	*	*	*	*	*	*
Relative Percent Difference (RPD)												
09/26/18	132	2.4	ND	0.0500	ND	0.1250	0.1510	0.1510	0.4270	0.4270	0.8060	0.8060
09/26/18$_d$	132	2.4	ND	0.0500	ND	0.1250	0.1460	0.1460	0.4280	0.4280	0.7770	0.7770
Relative Percent Difference (RPD)			ND		ND		3.3670		-0.2339		3.6639	
10/04/18	111	4.8	ND	0.5000	ND	1.2500	1.0900	1.0900	ND	0.5000	ND	0.0500

FORMOSA VOC CANISTER ANALYSIS
1st QUARTER 2019
POINT COMFORT - PC SITE
DUPLICATE SAMPLE SCHEDULE

SAMPLE DATE	AVG.WIND DIRECTION (Degrees)	AVG.WIND SPEED (mph)	ETHYLENE		1,3 BUTADIENE		BENZENE		VINYL CHLORIDE		ETHYLENE DICHLORIDE	
			Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)
10/04/18	111	4.8	ND	0.5000	ND	1.2500	0.1110	0.1110	ND	0.5000	ND	9.4900
10/04/18$_d$												
Relative Percent Difference (RPD)			ND		ND		163.0308		ND		ND	
10/10/18	344	3.8	ND	0.0500	ND	0.1250	0.7510	0.7510	0.9960	0.9960	0.9980	0.9980
10/10/18$_d$	344	3.8	ND	0.0500	ND	0.1250	0.8850	0.8850	0.9630	0.9630	0.9330	0.9330
Relative Percent Difference (RPD)			ND		ND		-16.3814		3.3691		6.7323	
10/16/18	317	6.3	ND	0.0500	ND	0.1250	0.2080	0.2080	ND	0.0500	ND	0.0500
10/16/18$_d$	317	6.3	ND	0.5000	ND	0.1250	0.2710	0.2710	ND	0.0500	ND	0.0500
Relative Percent Difference (RPD)			ND		ND		-26.3048		ND		ND	
10/22/18	351	4.8	ND	0.0500	ND	0.1250	0.3050	0.3050	4.7800	4.7800	0.1290	0.1290
10/22/18$_d$	351	4.8	*	*	*	*	*	*	*	*	*	*
Relative Percent Difference (RPD)												
10/28/18	179	2.8	ND	0.0500	ND	0.1250	0.2960	0.2960	ND	0.0500	ND	0.0500
10/28/18$_d$	179	2.8	*	*	*	*	*	*	*	*	*	*
Relative Percent Difference (RPD)												
11/03/18	136	6.7	0.3310	0.3310	ND	0.1250	0.1010	0.1010	ND	0.0500	ND	0.0500
11/03/18$_d$	136	6.7	0.3360	0.3360	0.4800	0.4800	ND	0.0500	ND	0.0500	ND	0.0500
Relative Percent Difference (RPD)			-1.4993		-117.3554		67.5497		ND		ND	
11/11/18	24	6.2	ND	0.0500	ND	0.1250	0.4330	0.4330	0.8340	0.8340	0.3180	0.3180
11/11/18$_d$	24	6.2	*	*	*	*	*	*	*	*	*	*
Relative Percent Difference (RPD)												
11/17/18	88	4.5	*	*	*	*	*	*	*	*	*	*
11/17/18$_d$	88	4.5	*	*	*	*	*	*	*	*	*	*
Relative Percent Difference (RPD)												
11/23/18	46	0.4	*	*	*	*	*	*	*	*	*	*
11/23/18$_d$	46	0.4	*	*	*	*	*	*	*	*	*	*
Relative Percent Difference (RPD)												
11/29/18	145	3.2	ND	0.0500	0.2780	0.2780	0.1770	0.1770	ND	0.0500	0.3070	0.3070
11/29/18$_d$	145	3.2	ND	0.0500	0.2940	0.2940	0.2170	0.2170	ND	0.0500	0.3340	0.3340
Relative Percent Difference (RPD)			ND		-5.5944		-20.3046		ND		-8.4243	
12/07/18	102	1.9	ND	0.0500	ND	0.1250	0.3240	0.3240	0.1260	0.1260	0.2680	0.2680
12/07/18$_d$	102	1.9	ND	0.0500	ND	0.1250	0.2100	0.2100	0.6580	0.6580	0.6510	0.6510
Relative Percent Difference (RPD)			ND		ND		42.6966		-135.7143		-83.3515	
12/13/18	235	6.7	ND	0.0500	ND	0.1250	0.1550	0.1550	ND	0.0500	ND	0.0500
12/13/18$_d$	235	6.7	ND	0.0500	ND	0.1250	0.1760	0.1760	ND	0.0500	ND	0.0500
Relative Percent Difference (RPD)			ND		ND		-12.6888		ND		ND	
12/25/18	106	5.9	ND	0.0500	ND	0.1250	0.2070	0.2070	0.1530	0.1530	0.8980	0.8980
12/25/18$_d$	106	5.9	*	*	*	*	*	*	*	*	*	*
Relative Percent Difference (RPD)												
12/31/18	254	3.2	0.7080	0.7080	ND	0.1250	0.3200	0.3200	ND	0.0500	ND	0.0500
12/31/18$_d$	254	3.2	*	*	*	*	*	*	*	*	*	*
Relative Percent Difference (RPD)												

FORMOSA VOC CANISTER ANALYSIS
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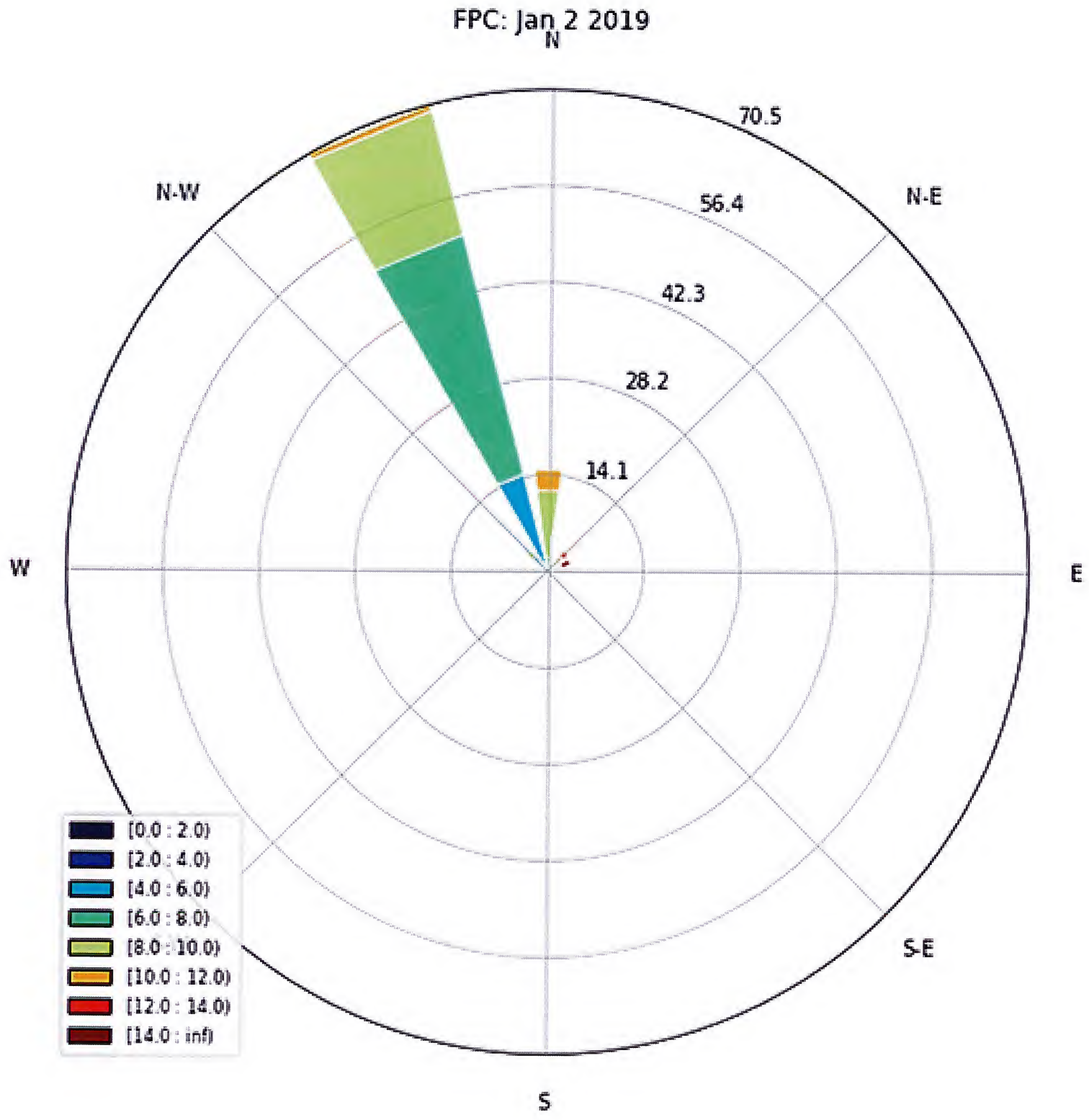
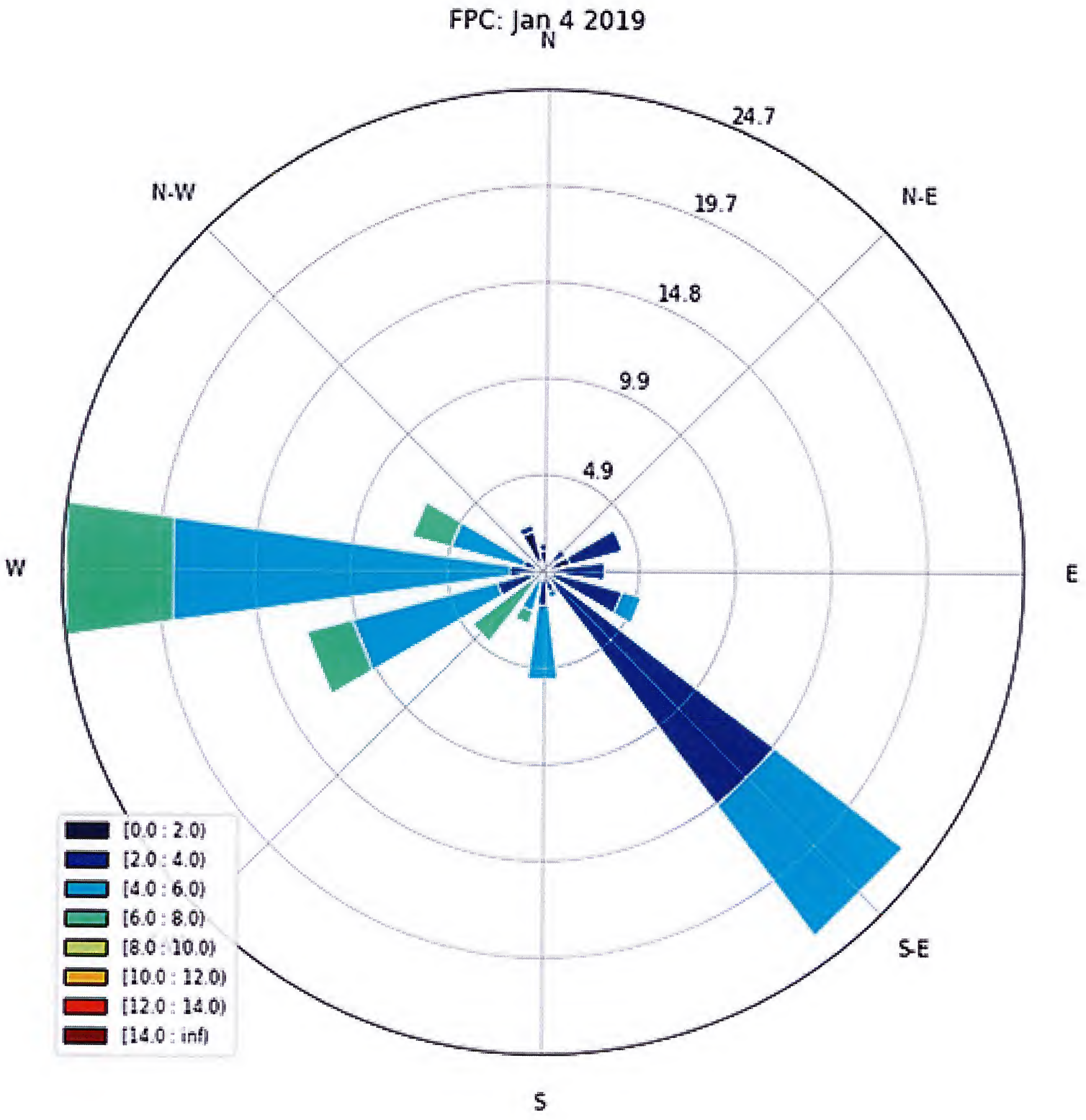
POINT COMFORT - PC SITE
DUPLICATE SAMPLE SCHEDULE

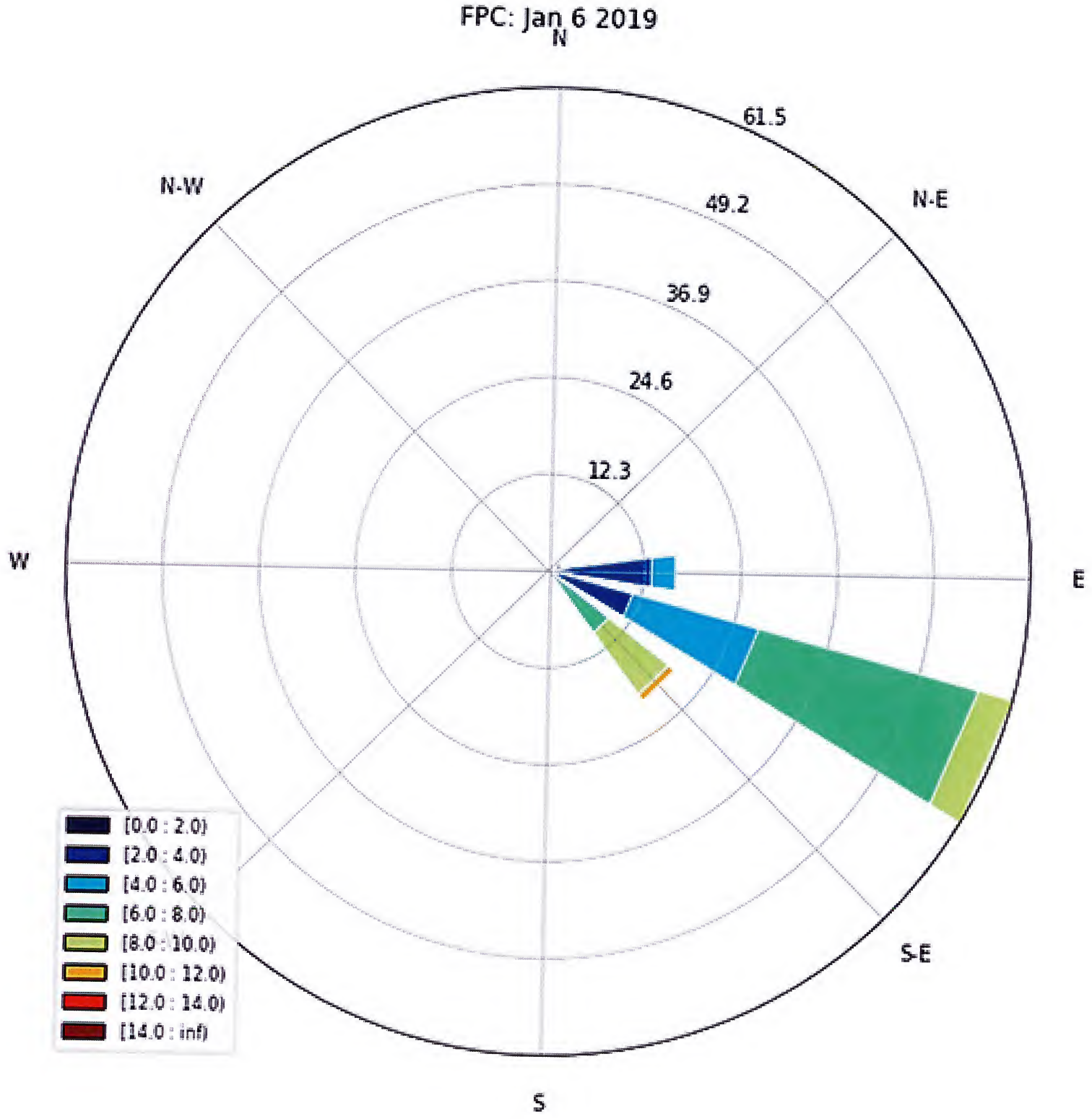
SAMPLE DATE	AVG.WIND DIRECTION (Degrees)	AVG.WIND SPEED (mph)	ETHYLENE		1,3 BUTADIENE		BENZENE		VINYL CHLORIDE		ETHYLENE DICHLORIDE	
			Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)	Actual (ppb)	1/2 Reported LOD (ppb)
01/08/19	153	1.4	ND	0.0500	ND	0.1250	0.1680	0.1680	ND	0.0500	0.1360	0.1360
01/08/19$_d$	153	1.4	*	*	*	*	*	*	*	*	*	*
Relative Percent Difference (RPD)												
01/16/19	85	5.8	ND	0.5000	ND	0.1250	0.1990	0.1990	0.2050	0.2050	1.2000	1.2000
01/16/19$_d$	85	5.8	ND	0.0500	ND	0.1250	0.1880	0.1880	0.3510	0.3510	1.3700	1.3700
Relative Percent Difference (RPD)			ND		ND		5.6848		-52.5180		-13.2296	
01/22/19	137	8.5	*	*	*	*	*	*	*	*	ND	0.0500
01/22/19$_d$	137	8.5	*	*	*	*	*	*	*	*	*	*
Relative Percent Difference (RPD)												
01/30/19	42	7.8	2.7300	2.7300	ND	0.1250	ND	0.0500	0.5350	0.5350	2.7300	2.7300
01/30/19$_d$	42	7.8	ND	0.0500	ND	0.1250	0.2000	0.2000	1.5600	1.5600	2.0800	2.0800
Relative Percent Difference (RPD)			192.8058		ND		-120.0000		-97.8520		27.0270	
02/07/19	13	3.9	ND	0.0500	ND	0.1250	0.4920	0.4920	0.1640	0.1640	ND	0.0500
02/07/19$_d$	13	3.9	ND	0.0500	0.1760	0.1760	0.3170	0.3170	0.4320	0.4320	ND	0.0500
Relative Percent Difference (RPD)			ND		-33.8870		43.2633		-89.9329		ND	
02/09/19	353	6.8	0.2530	0.2530	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
02/09/19$_d$	353	6.8	0.1040	0.1040	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
Relative Percent Difference (RPD)			83.4734		ND		ND		ND		ND	
02/13/19	90	4.6	*	*	*	*	*	*	*	*	*	*
02/13/19$_d$	90	4.6	*	*	*	*	*	*	*	*	*	*
Relative Percent Difference (RPD)												
02/19/19	354	6.0	*	*	*	*	*	*	*	*	*	*
02/19/19$_d$	354	6.0	*	*	*	*	*	*	*	*	*	*
Relative Percent Difference (RPD)												
02/25/19	49	7.8	3.1100	3.1100	ND	0.1250	ND	0.0500	0.6300	0.6300	3.4600	3.4600
02/25/19$_d$	49	7.8	*	*	*	*	*	*	*	*	*	*
Relative Percent Difference (RPD)												
03/05/19	340	7.2	ND	0.0500	ND	0.1250	0.3260	0.3260	0.3800	0.3800	ND	0.0500
03/05/19$_d$	340	7.2	ND	0.0500	ND	0.1250	0.1710	0.1710	ND	0.0500	ND	0.3340
Relative Percent Difference (RPD)			ND		ND		62.3742		153.4884		ND	
03/09/19	131	6.4	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
03/09/19$_d$	131	6.4	ND	0.0500	ND	0.1250	ND	0.0500	ND	0.0500	ND	0.0500
Relative Percent Difference (RPD)			ND		ND		ND		ND		ND	
03/15/19	340	8.0	ND	0.0500	ND	0.1250	0.2820	0.2820	0.3870	0.3870	ND	0.0500
03/15/19$_d$	340	8.0	ND	0.0500	ND	0.1250	0.2870	0.2870	0.4260	0.4260	ND	0.0500
Relative Percent Difference (RPD)			ND		ND		-1.7575		-9.5941		ND	
03/21/19	100	2.8	16.7000	16.7000	ND	0.0500	0.4200	0.4200	0.6240	0.6240	1.3500	1.3500
03/21/19$_d$	100	2.8	*	*	*	*	*	*	*	*	*	*
Relative Percent Difference (RPD)												
03/27/19	90	5.4	*	*	*	*	*	*	*	*	*	*
03/27/19$_d$	90	5.4	*	*	*	*	*	*	*	*	*	*
Relative Percent Difference (RPD)												

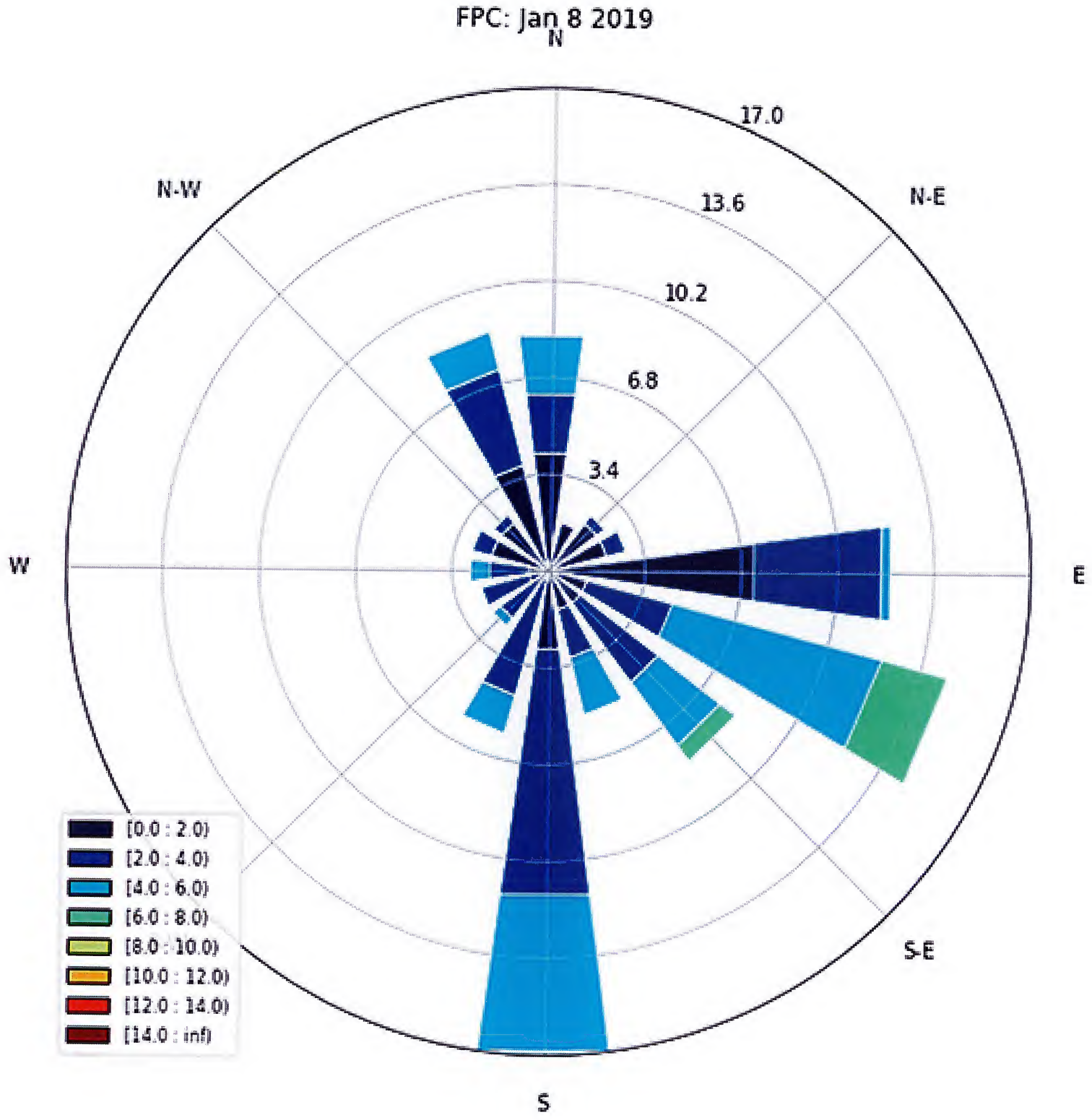
Summary of Non-operational Periods
1st QUARTER 2019
Point Comfort SUMMA Canister System

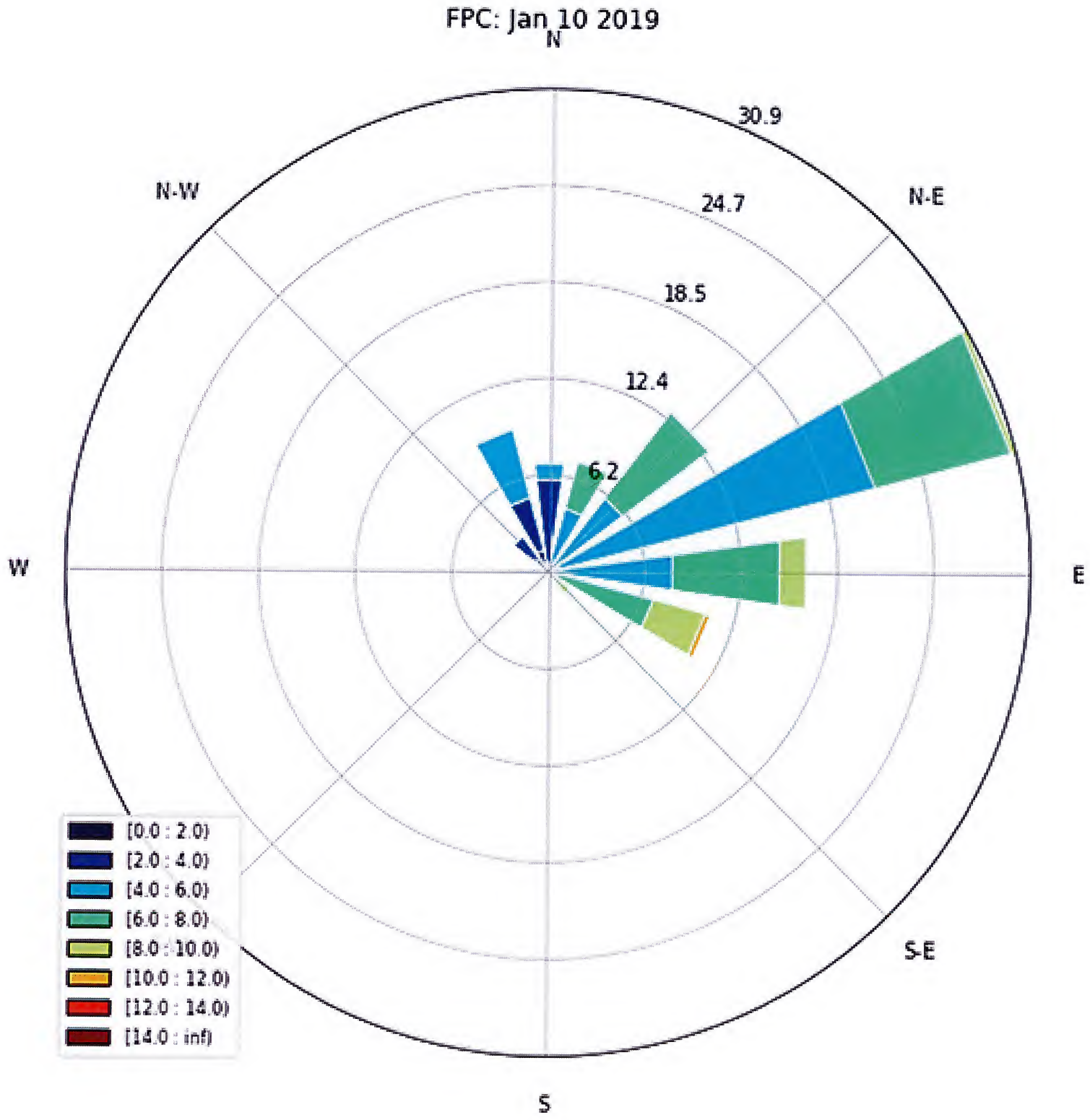
SUMMA Site	Date (s)	Description of Problem	Corrective Action
PC	1/22/19	Voided sample due to low pressure.	Adjusted flow controller to decrease amount sampled.
PC	2/1/19	Phase 3 weather.	
PC & PC(duplicate)	2/13/19	Analyst voided samples.	
PC	2/15/19	Road Blocked.	
PC & PC(duplicate)	2/17-19/2019	Sampling system not functioning	AECOM fixed issue.
City Hall, Formosa Training Complex, & Park	2/23/19	No SUMMA cans available.	Original lab could not keep up with the amount of SUMMA canisters needed. The lab notified us and stated they would no longer provide services to us. Sample results for the canister they had were delayed which left us without SUMMA canisters until another lab could be arranged.
PC	3/3/19	Analyst voided sample.	
City Hall, Formosa Training Complex, & Park	3/7/19	No SUMMA cans available.	Original lab could not keep up with the amount of SUMMA canisters needed. The lab notified us and stated they would no longer provide services to us. Sample results for the canister they had were delayed which left us without SUMMA canisters until another lab could be arranged.
City Hall, Formosa Training Complex, & Park	3/19/19		
City Hall, Formosa Training Complex, & Park	3/25/19		
City Hall, Formosa Training Complex, & Park	3/31/19		
PC & PC(duplicate)	3/23-31/2019		
City Hall	3/13/19	Voided sample due to low pressure.	Adjusted flow controller to decrease amount sampled.

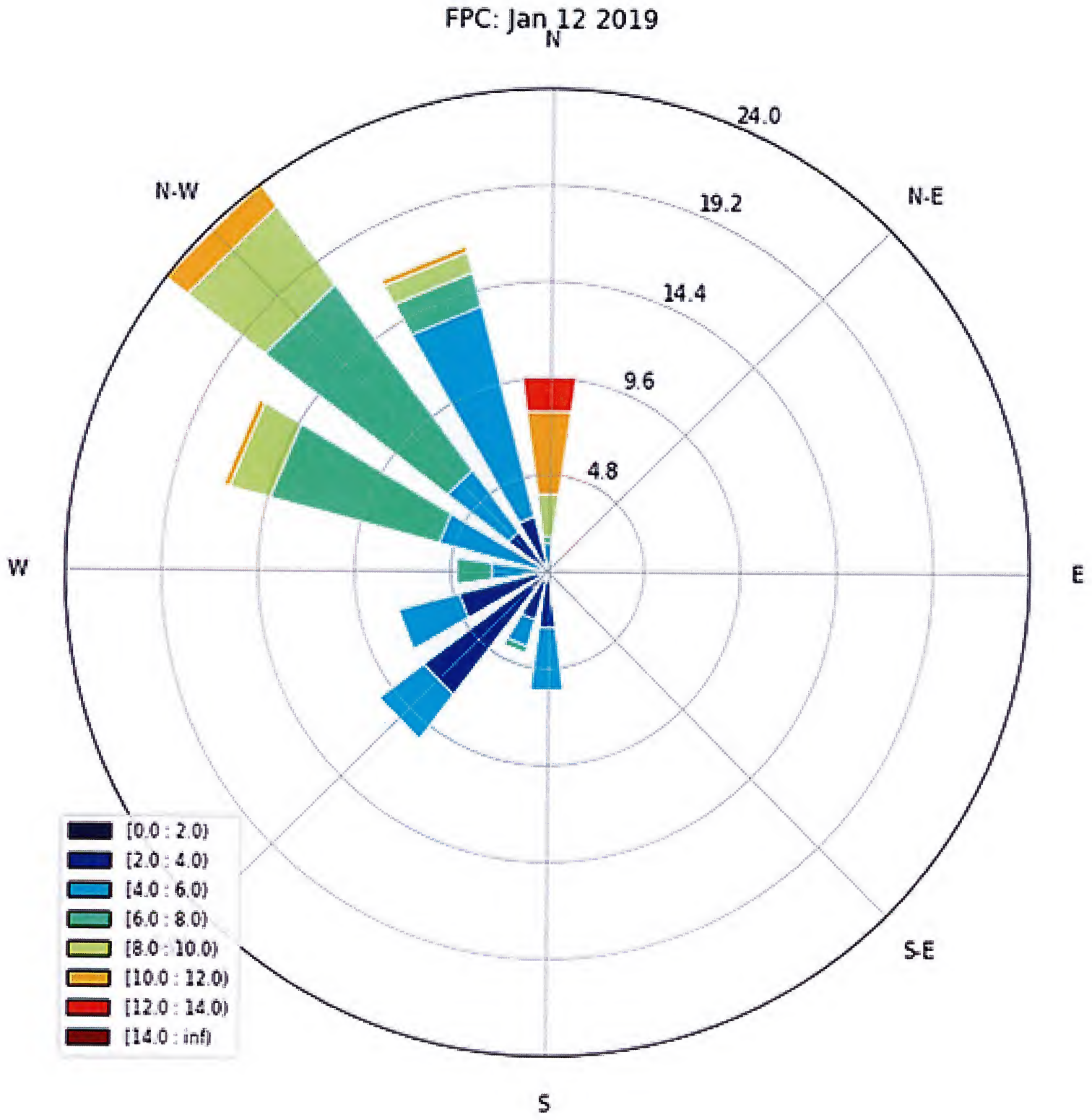

FPC: Jan 2 2019
N
N-E
E
S-E
S
W
N-W
70.5
56.4
42.3
28.2
14.1
[0.0 : 2.0)
[2.0 : 4.0)
[4.0 : 6.0)
[6.0 : 8.0)
[8.0 : 10.0)
[10.0 : 12.0)
[12.0 : 14.0)
[14.0 : inf)

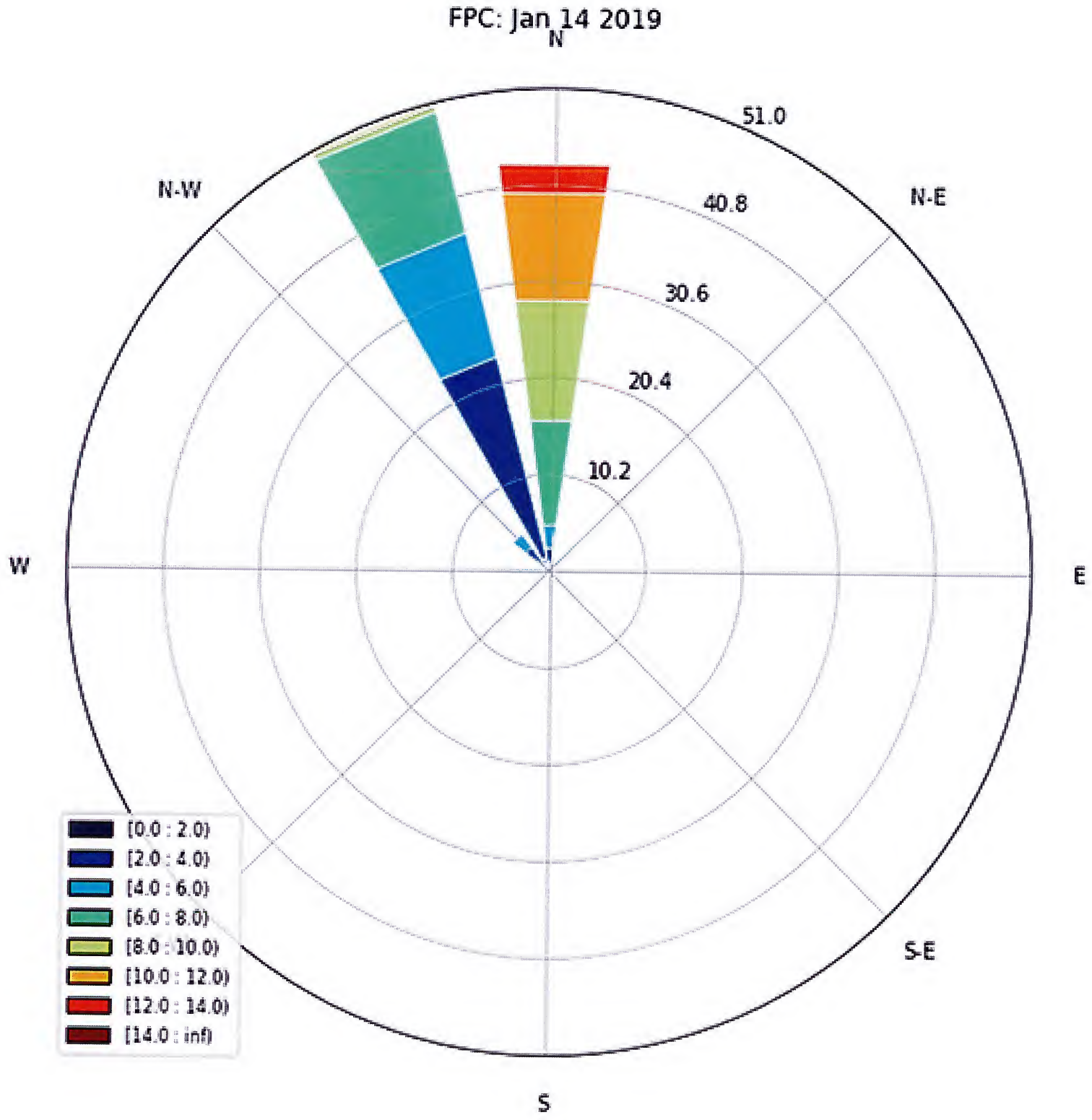

FPC: Jan 4 2019
N
N-E
E
S-E
S
W
N-W
24.7
19.7
14.8
9.9
4.9
[0.0 : 2.0)
[2.0 : 4.0)
[4.0 : 6.0)
[6.0 : 8.0)
[8.0 : 10.0)
[10.0 : 12.0)
[12.0 : 14.0)
[14.0 : inf)

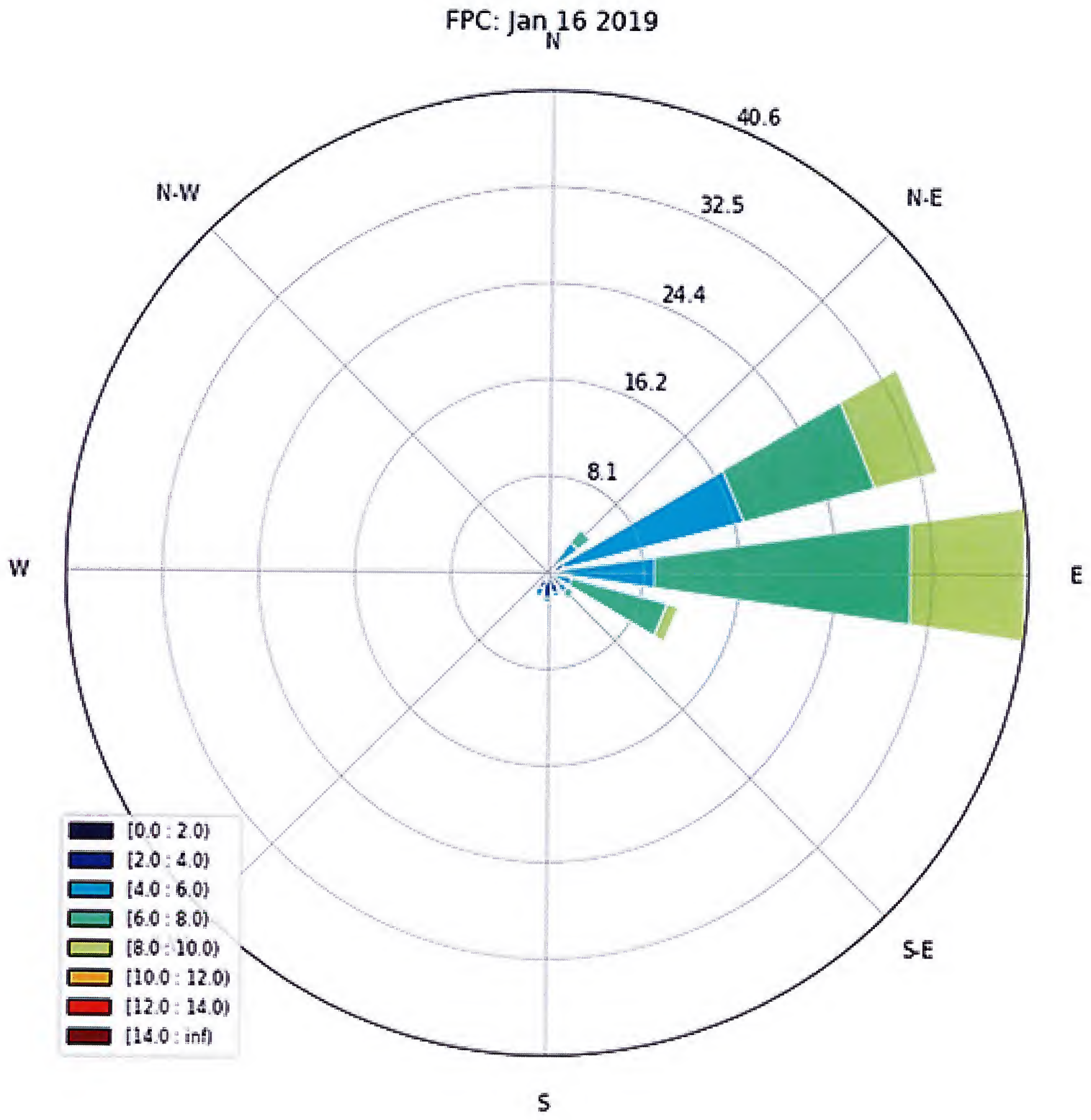

FPC: Jan 6 2019
N
N-E
E
S-E
S
W
N-W
61.5
49.2
36.9
24.6
12.3
[0.0 : 2.0)
[2.0 : 4.0)
[4.0 : 6.0)
[6.0 : 8.0)
[8.0 : 10.0)
[10.0 : 12.0)
[12.0 : 14.0)
[14.0 : inf)

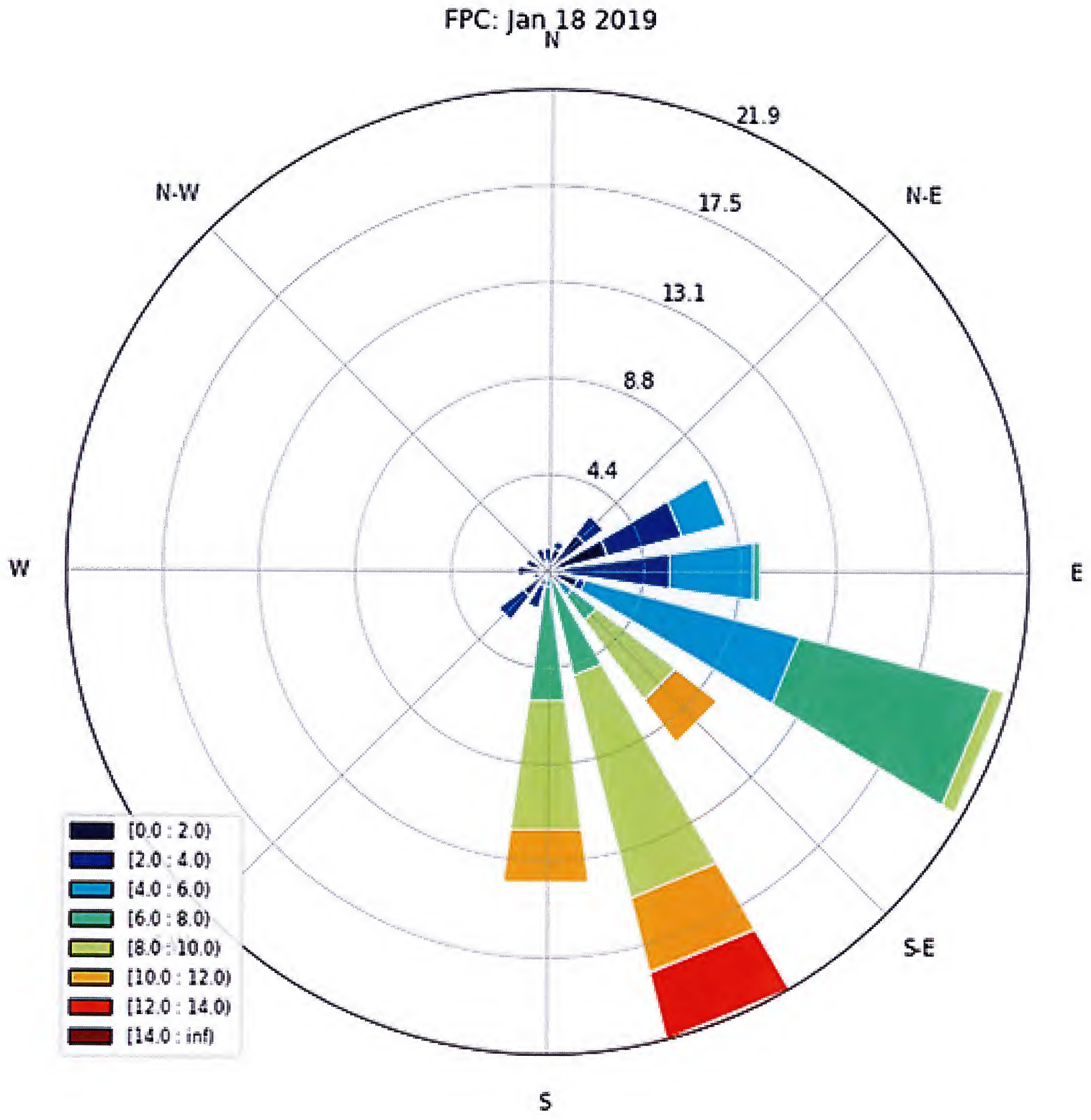

FPC: Jan 8 2019
N
N-E
E
S-E
S
S-W
W
N-W
17.0
13.6
10.2
6.8
3.4
[0.0 : 2.0)
[2.0 : 4.0)
[4.0 : 6.0)
[6.0 : 8.0)
[8.0 : 10.0)
[10.0 : 12.0)
[12.0 : 14.0)
[14.0 : inf)

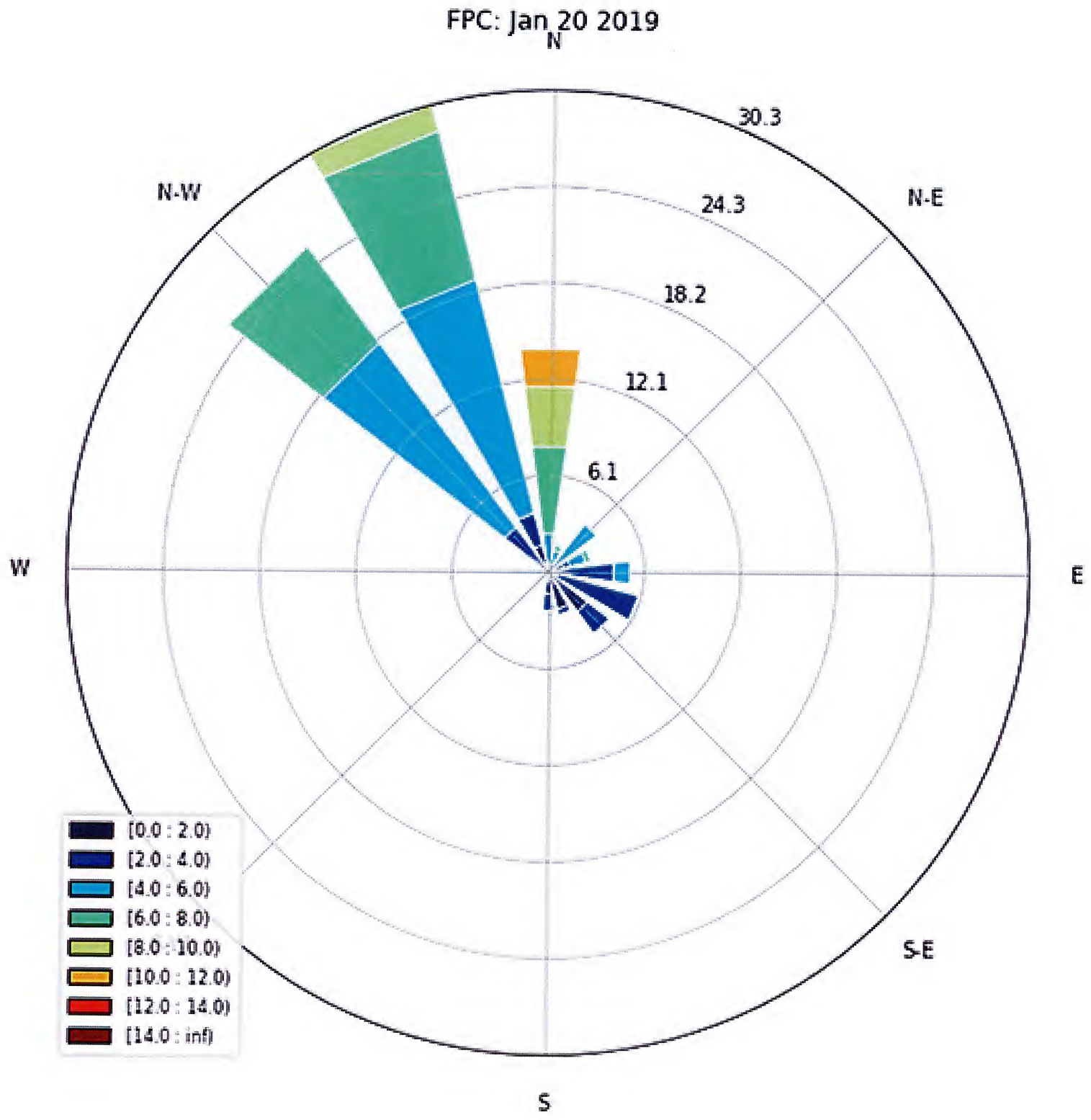

FPC: Jan 10 2019
N
N-E
E
S-E
S
W
N-W
30.9
24.7
18.5
12.4
6.2
[0.0 : 2.0)
[2.0 : 4.0)
[4.0 : 6.0)
[6.0 : 8.0)
[8.0 : 10.0)
[10.0 : 12.0)
[12.0 : 14.0)
[14.0 : inf)

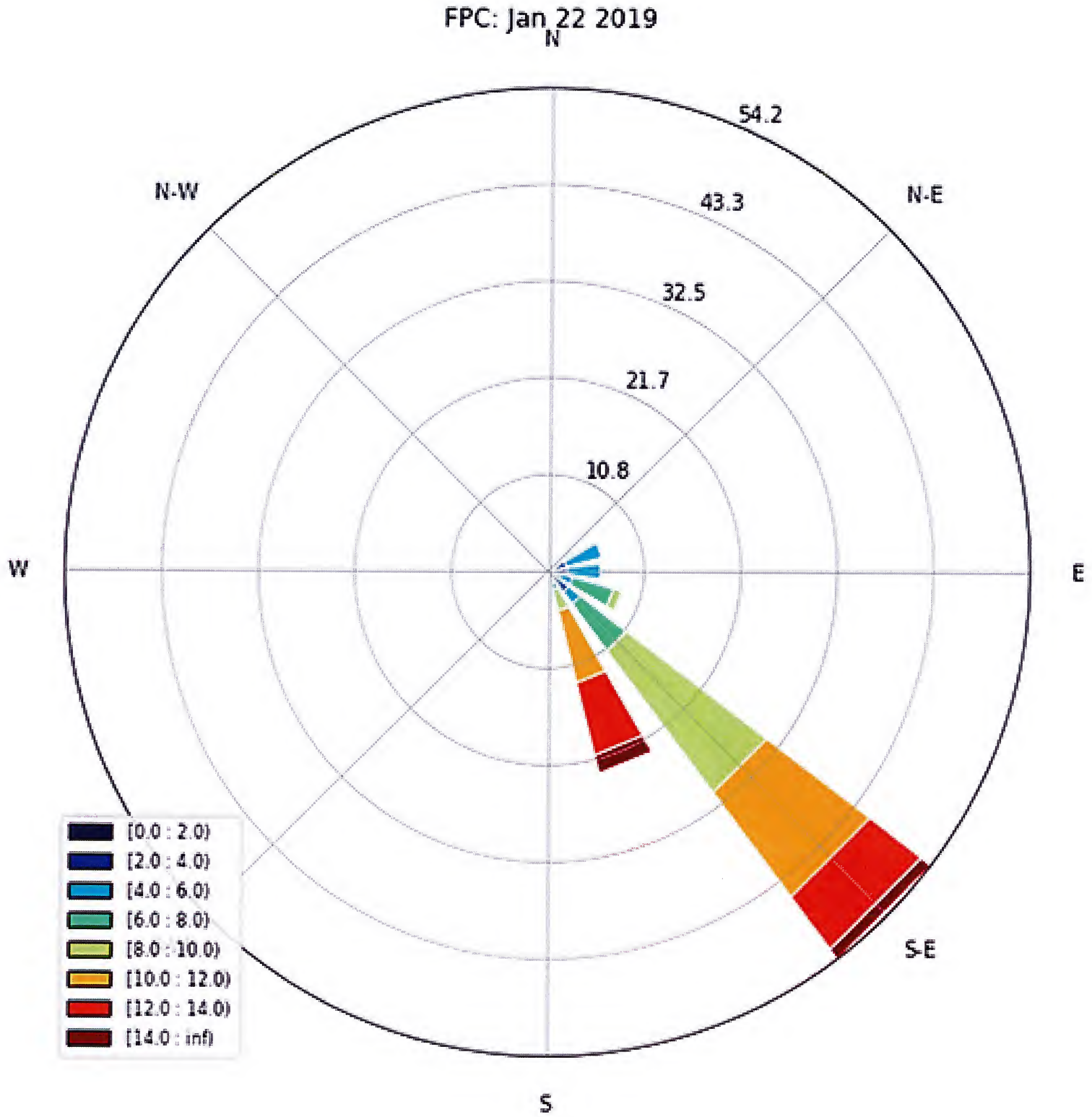

FPC: Jan 12 2019
N
N-E
E
S-E
S
W
N-W
24.0
19.2
14.4
9.6
4.8
[0.0 : 2.0)
[2.0 : 4.0)
[4.0 : 6.0)
[6.0 : 8.0)
[8.0 : 10.0)
[10.0 : 12.0)
[12.0 : 14.0)
[14.0 : inf)

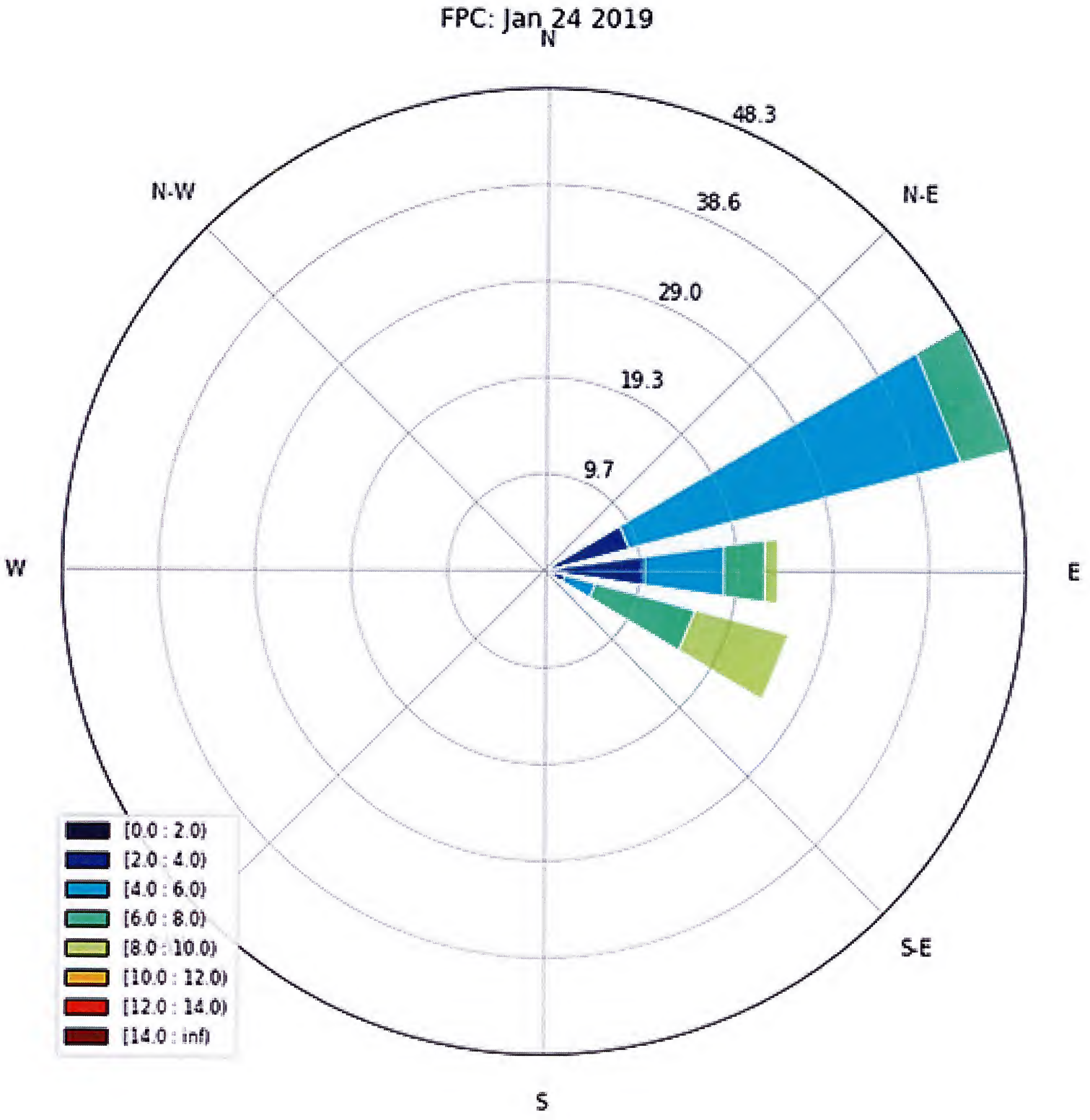

FPC: Jan 14 2019
N
N-E
E
S-E
S
W
N-W
51.0
40.8
30.6
20.4
10.2
[0.0 : 2.0)
[2.0 : 4.0)
[4.0 : 6.0)
[6.0 : 8.0)
[8.0 : 10.0)
[10.0 : 12.0)
[12.0 : 14.0)
[14.0 : inf)

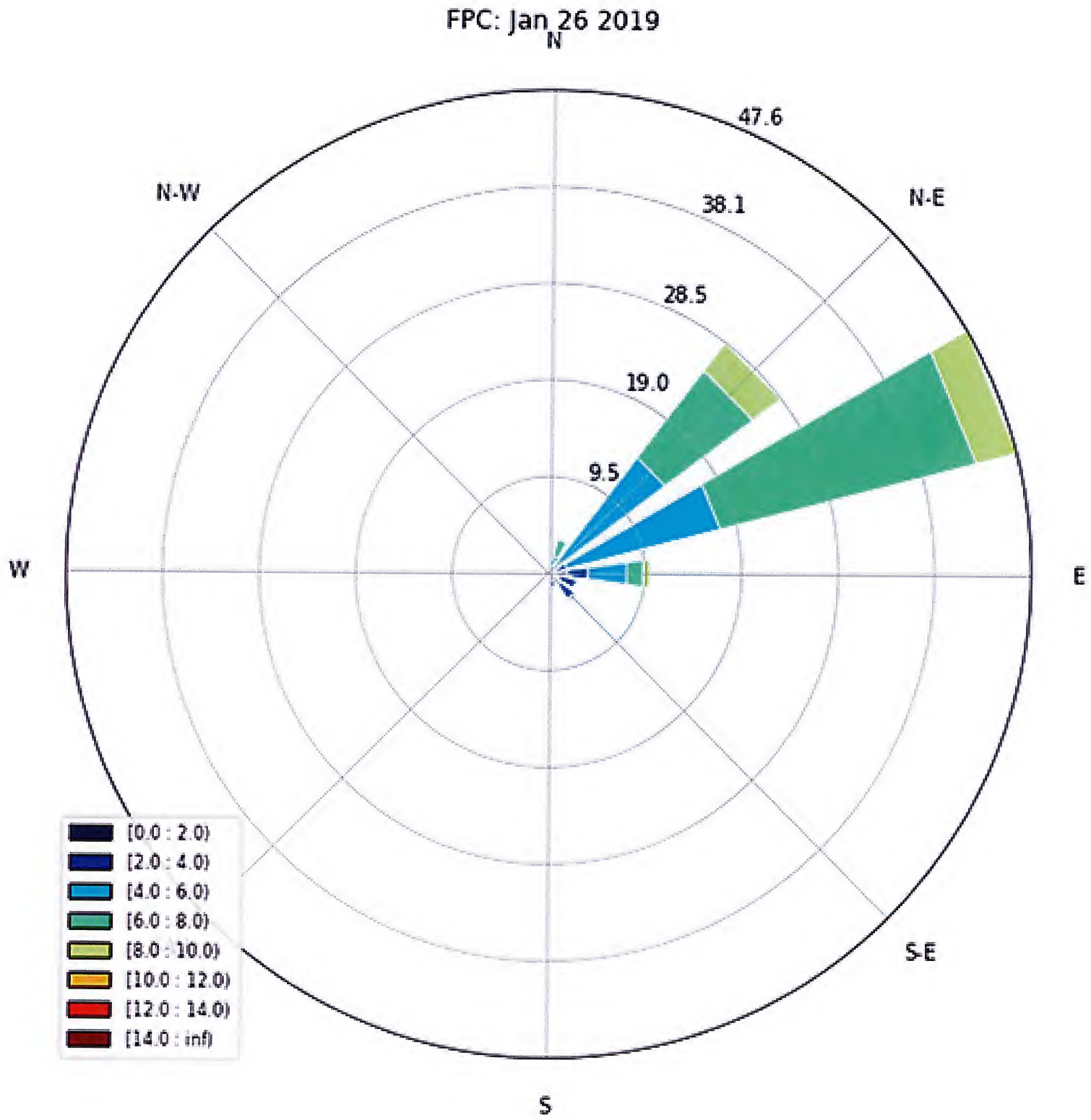

FPC: Jan 16 2019
N
N-E
E
S-E
S
W
N-W
40.6
32.5
24.4
16.2
8.1
[0.0 : 2.0)
[2.0 : 4.0)
[4.0 : 6.0)
[6.0 : 8.0)
[8.0 : 10.0)
[10.0 : 12.0)
[12.0 : 14.0)
[14.0 : inf)

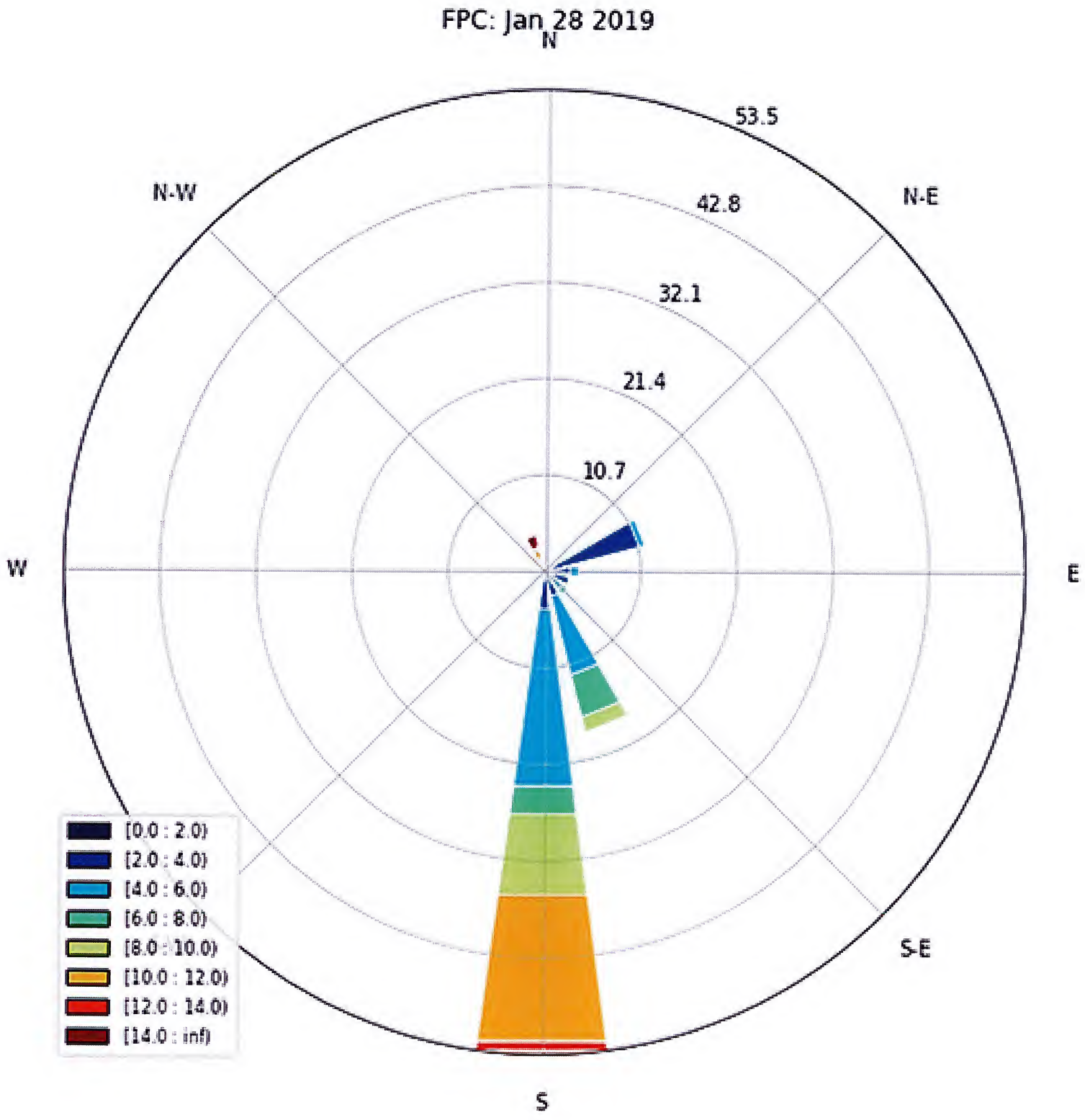

FPC: Jan 18 2019
N
N-E
E
S-E
S
S-W
W
N-W
21.9
17.5
13.1
8.8
4.4
[0.0 : 2.0)
[2.0 : 4.0)
[4.0 : 6.0)
[6.0 : 8.0)
[8.0 : 10.0)
[10.0 : 12.0)
[12.0 : 14.0)
[14.0 : inf)

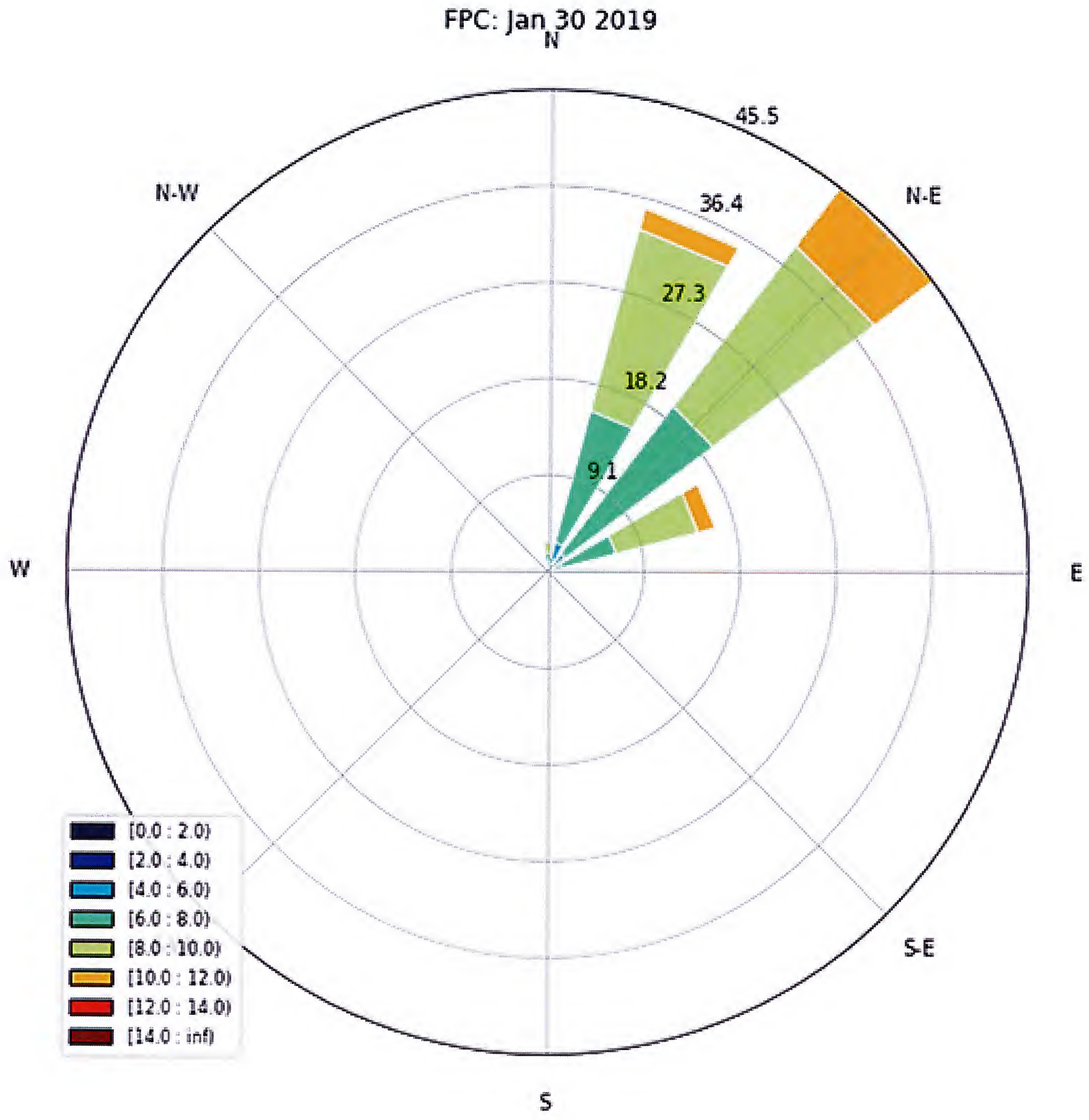

FPC: Jan 20 2019
N
N-E
E
S-E
S
W
N-W
30.3
24.3
18.2
12.1
6.1
[0.0 : 2.0)
[2.0 : 4.0)
[4.0 : 6.0)
[6.0 : 8.0)
[8.0 : 10.0)
[10.0 : 12.0)
[12.0 : 14.0)
[14.0 : inf)

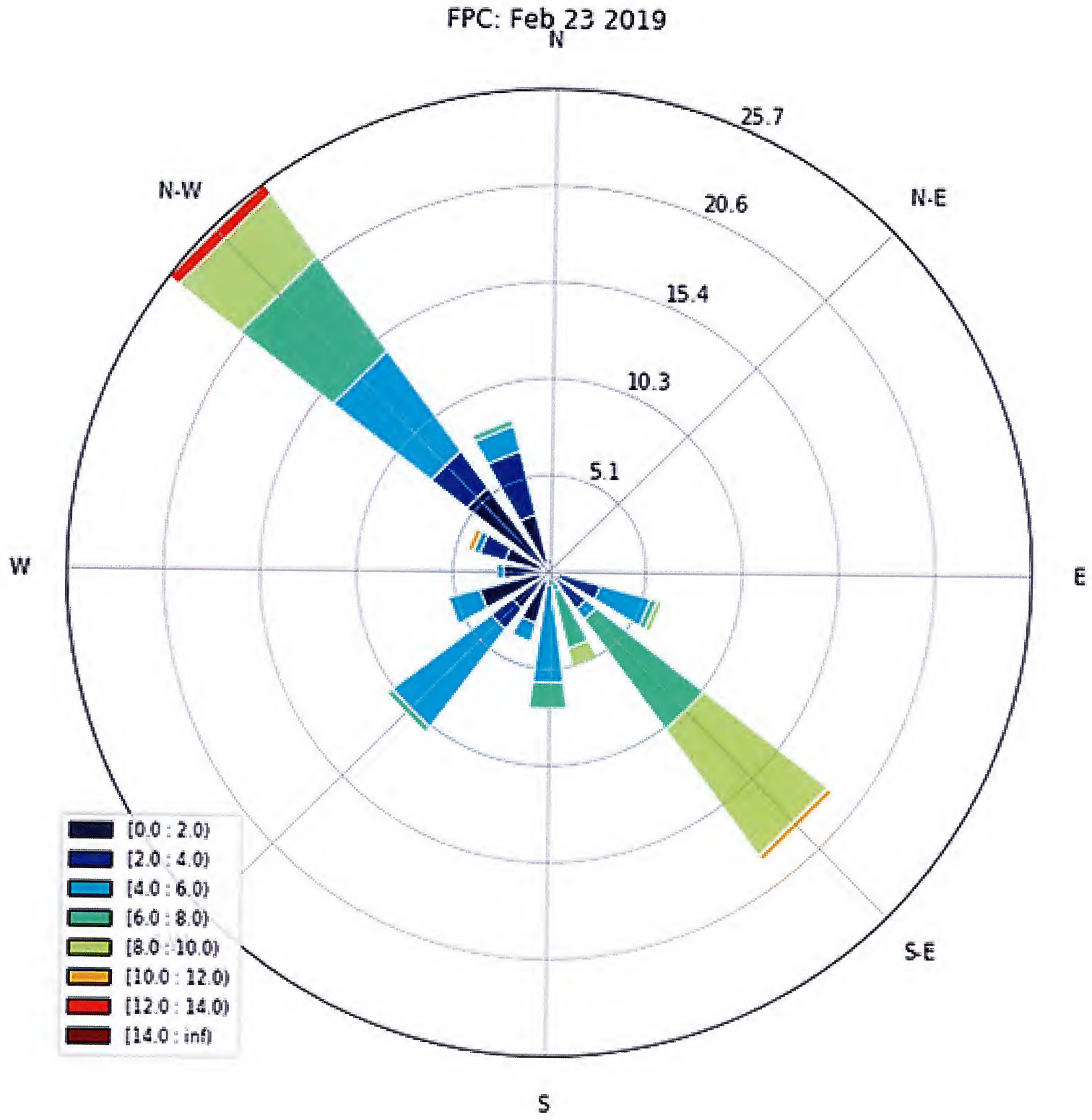

FPC: Jan 22 2019
N
N-E
E
S-E
S
S-W
W
N-W
54.2
43.3
32.5
21.7
10.8
[0.0 : 2.0)
[2.0 : 4.0)
[4.0 : 6.0)
[6.0 : 8.0)
[8.0 : 10.0)
[10.0 : 12.0)
[12.0 : 14.0)
[14.0 : inf)

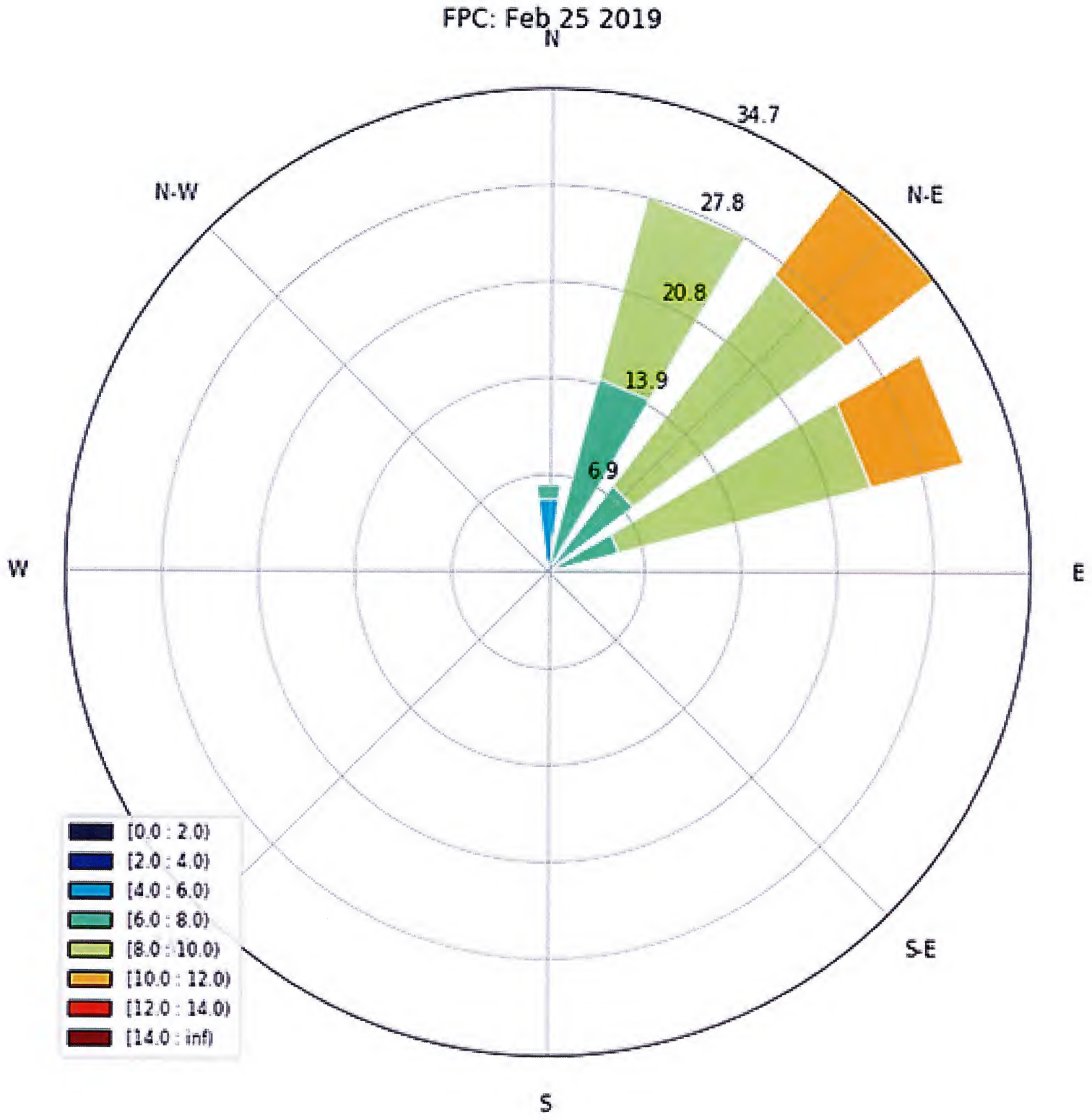

FPC: Jan 24 2019
N
N-E
E
S-E
S
S-W
W
N-W
48.3
38.6
29.0
19.3
9.7
[0.0 : 2.0)
[2.0 : 4.0)
[4.0 : 6.0)
[6.0 : 8.0)
[8.0 : 10.0)
[10.0 : 12.0)
[12.0 : 14.0)
[14.0 : inf)

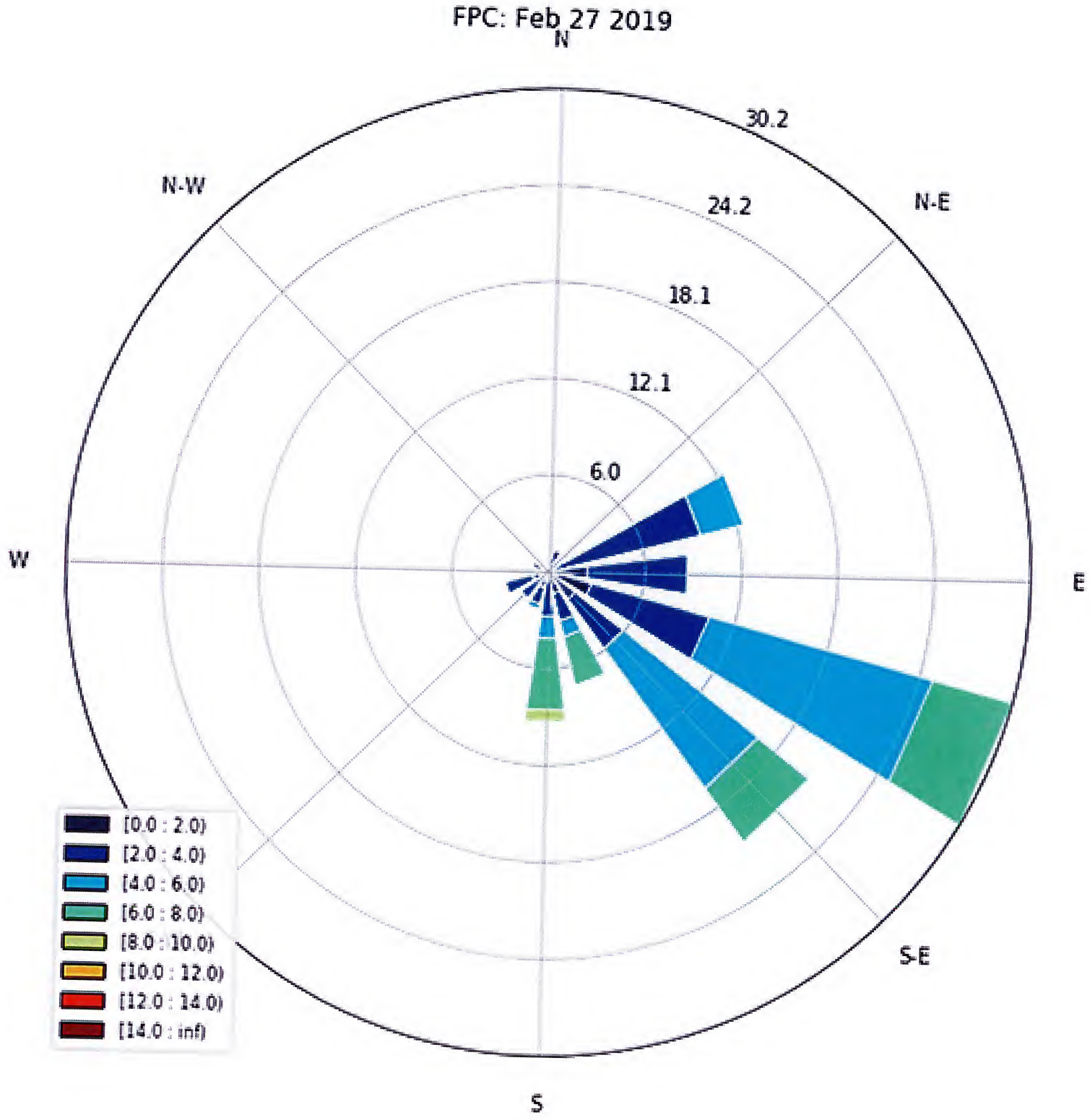

FPC: Jan 26 2019
N
N-E
E
S-E
S
S-W
W
N-W
47.6
38.1
28.5
19.0
9.5
[0.0 : 2.0)
[2.0 : 4.0)
[4.0 : 6.0)
[6.0 : 8.0)
[8.0 : 10.0)
[10.0 : 12.0)
[12.0 : 14.0)
[14.0 : inf)

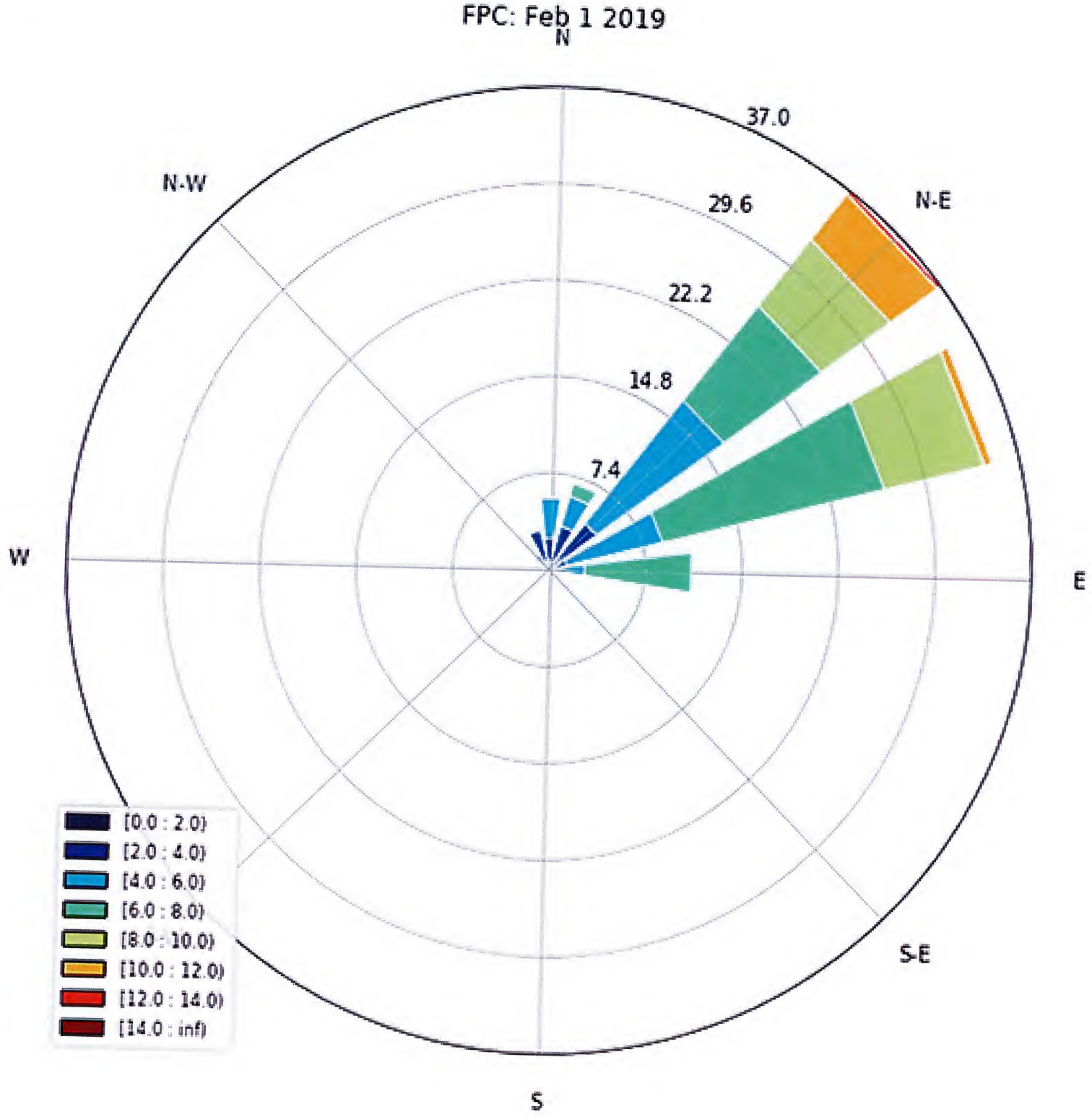

FPC: Jan 28 2019
N
N-E
E
S-E
S
W
N-W
53.5
42.8
32.1
21.4
10.7
[0.0 : 2.0)
[2.0 : 4.0)
[4.0 : 6.0)
[6.0 : 8.0)
[8.0 : 10.0)
[10.0 : 12.0)
[12.0 : 14.0)
[14.0 : inf)

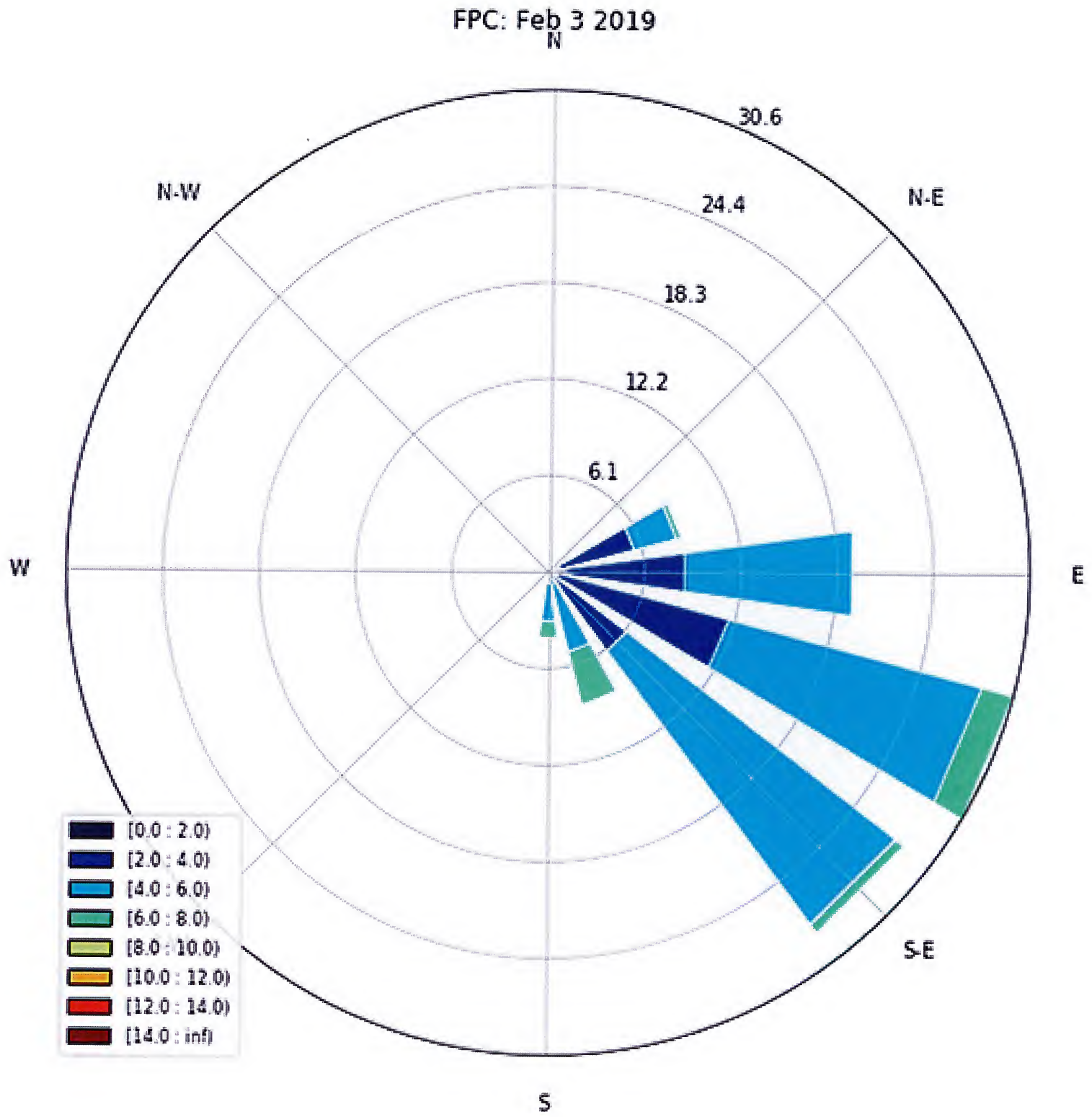

FPC: Jan 30 2019
N
N-E
E
S-E
S
W
N-W
45.5
36.4
27.3
18.2
9.1
[0.0 : 2.0)
[2.0 : 4.0)
[4.0 : 6.0)
[6.0 : 8.0)
[8.0 : 10.0)
[10.0 : 12.0)
[12.0 : 14.0)
[14.0 : inf)

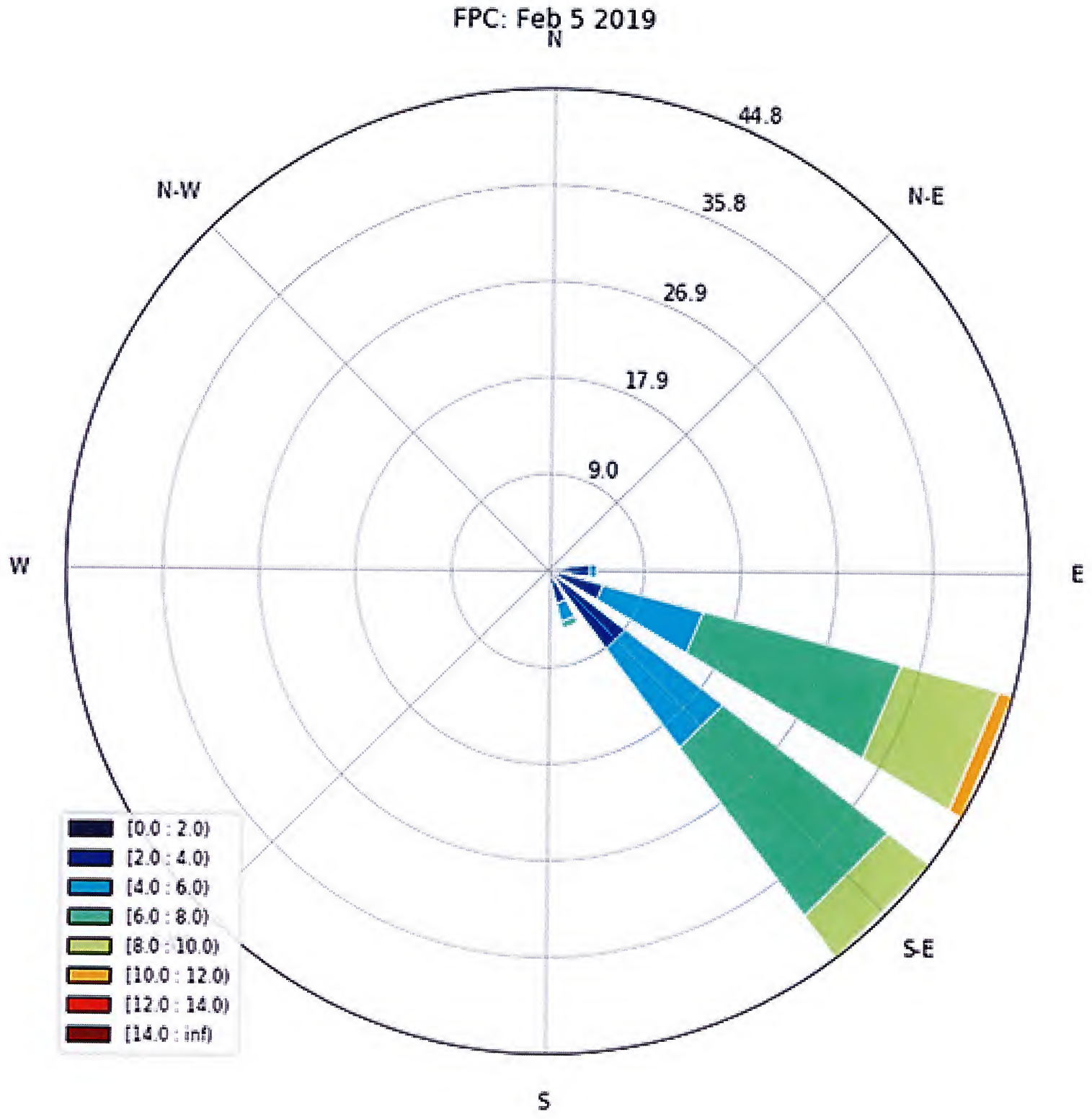

FPC: Feb 23 2019
N
N-E
E
S-E
S
W
N-W
25.7
20.6
15.4
10.3
5.1
[0.0 : 2.0)
[2.0 : 4.0)
[4.0 : 6.0)
[6.0 : 8.0)
[8.0 : 10.0)
[10.0 : 12.0)
[12.0 : 14.0)
[14.0 : inf)

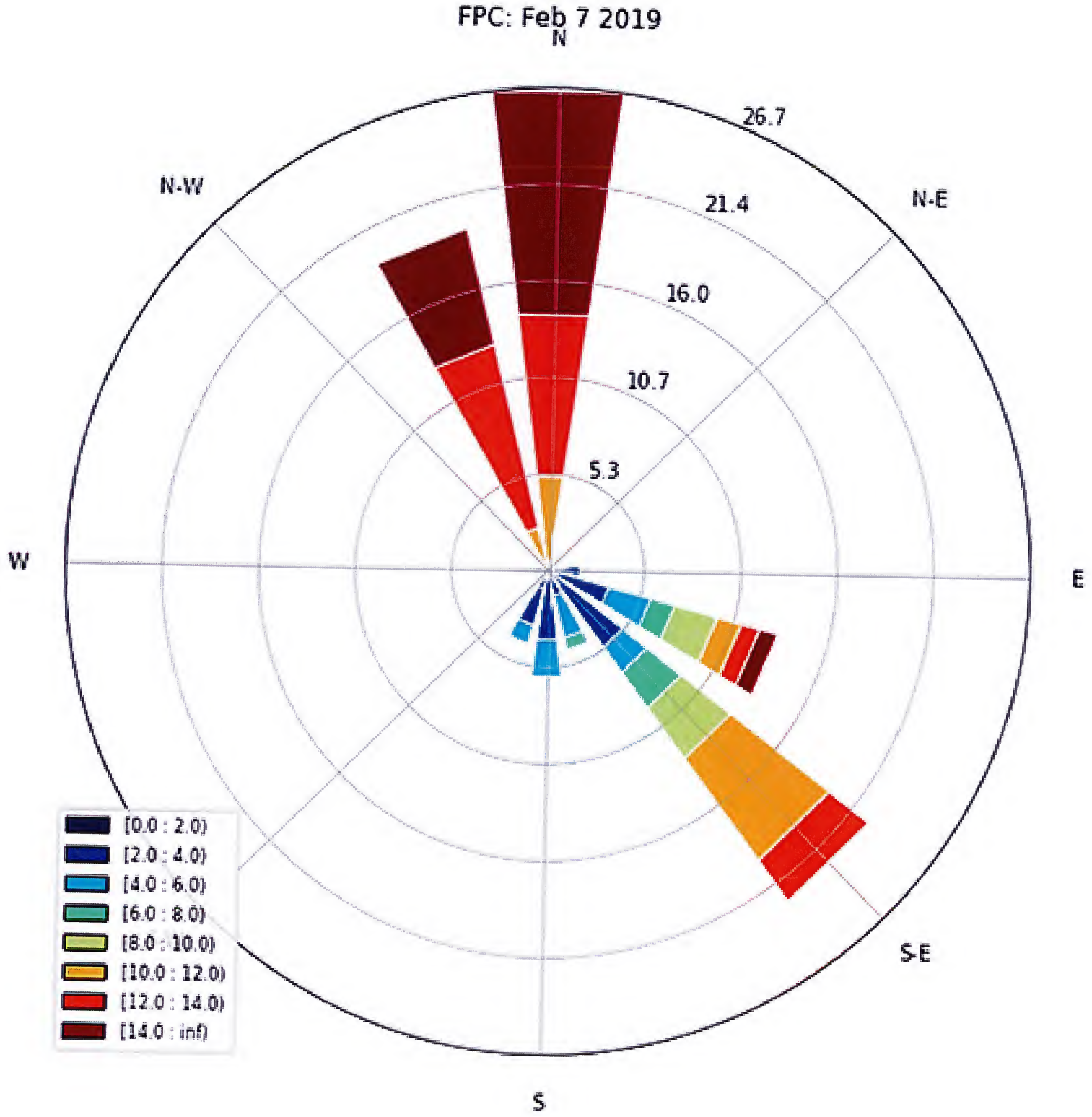

FPC: Feb 25 2019
N
N-E
E
S-E
S
W
N-W
34.7
27.8
20.8
13.9
6.9
[0.0 : 2.0)
[2.0 : 4.0)
[4.0 : 6.0)
[6.0 : 8.0)
[8.0 : 10.0)
[10.0 : 12.0)
[12.0 : 14.0)
[14.0 : inf)

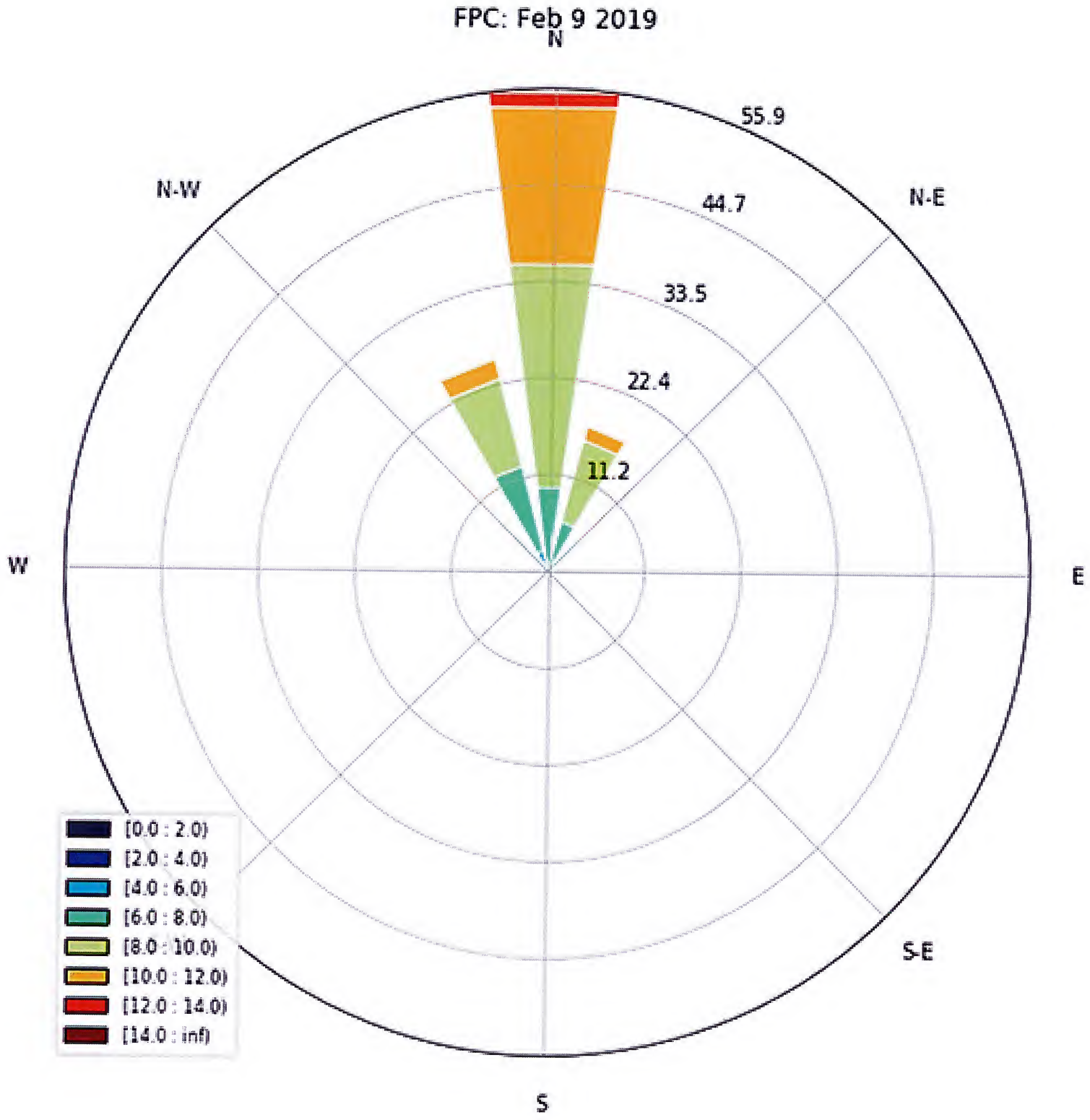

FPC: Feb 27 2019
N
N-E
E
S-E
S
W
N-W
30.2
24.2
18.1
12.1
6.0
[0.0 : 2.0)
[2.0 : 4.0)
[4.0 : 6.0)
[6.0 : 8.0)
[8.0 : 10.0)
[10.0 : 12.0)
[12.0 : 14.0)
[14.0 : inf)

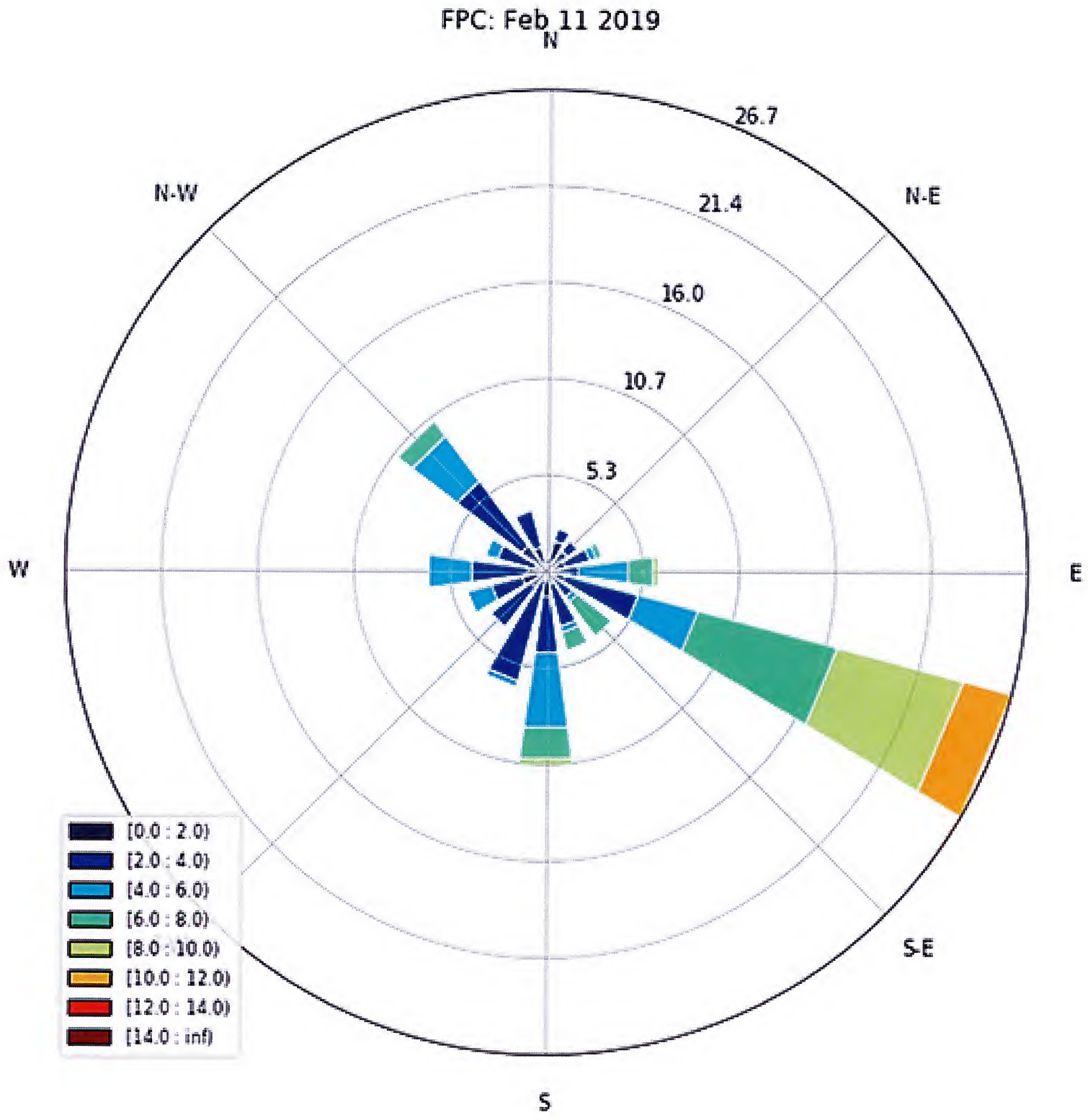

FPC: Feb 1 2019
N
N-E
E
S-E
S
W
N-W
37.0
29.6
22.2
14.8
7.4
[0.0 : 2.0)
[2.0 : 4.0)
[4.0 : 6.0)
[6.0 : 8.0)
[8.0 : 10.0)
[10.0 : 12.0)
[12.0 : 14.0)
[14.0 : inf)

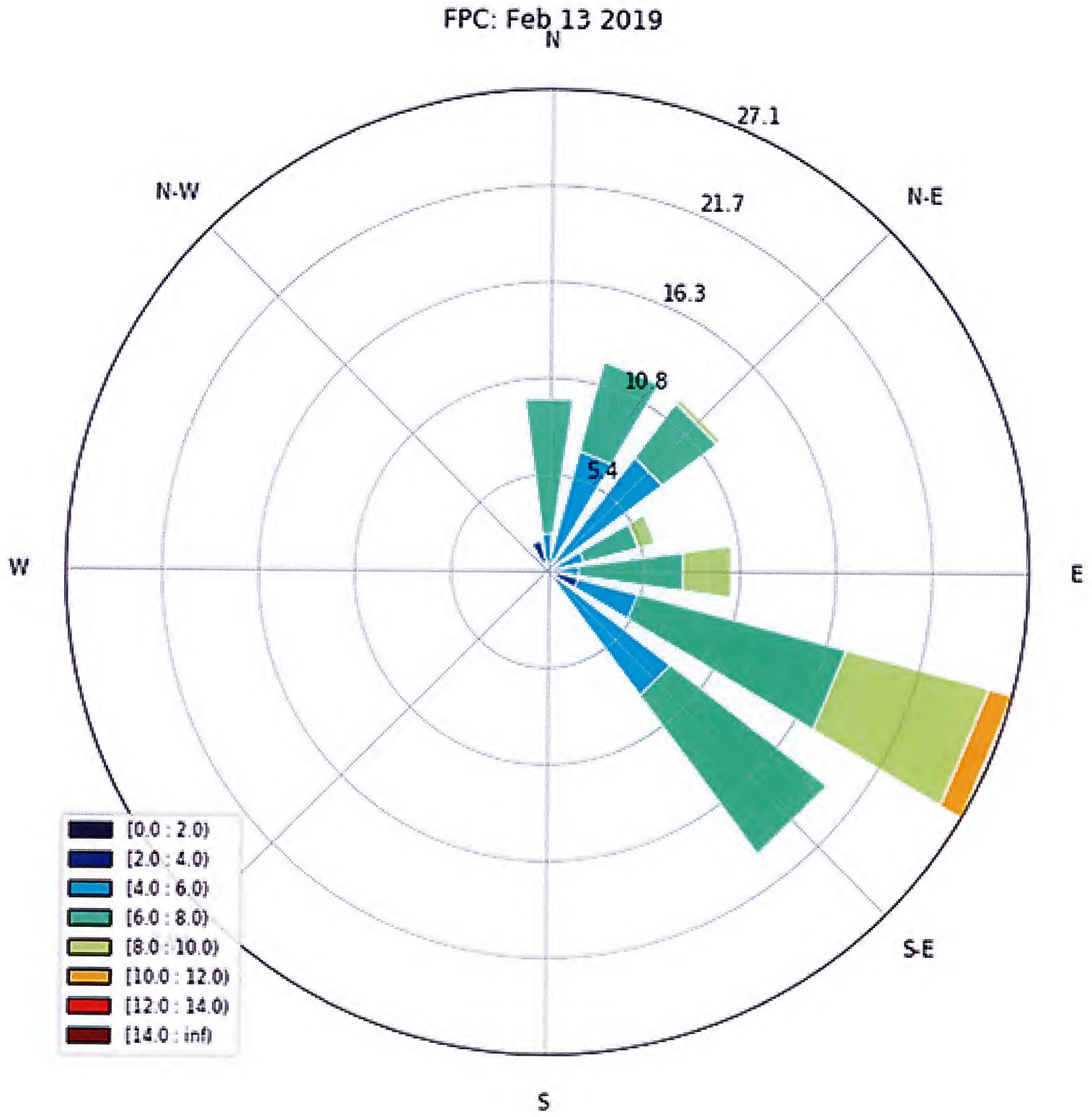

FPC: Feb 3 2019
N
N-E
E
S-E
S
S-W
W
N-W
30.6
24.4
18.3
12.2
6.1
[0.0 : 2.0)
[2.0 : 4.0)
[4.0 : 6.0)
[6.0 : 8.0)
[8.0 : 10.0)
[10.0 : 12.0)
[12.0 : 14.0)
[14.0 : inf)

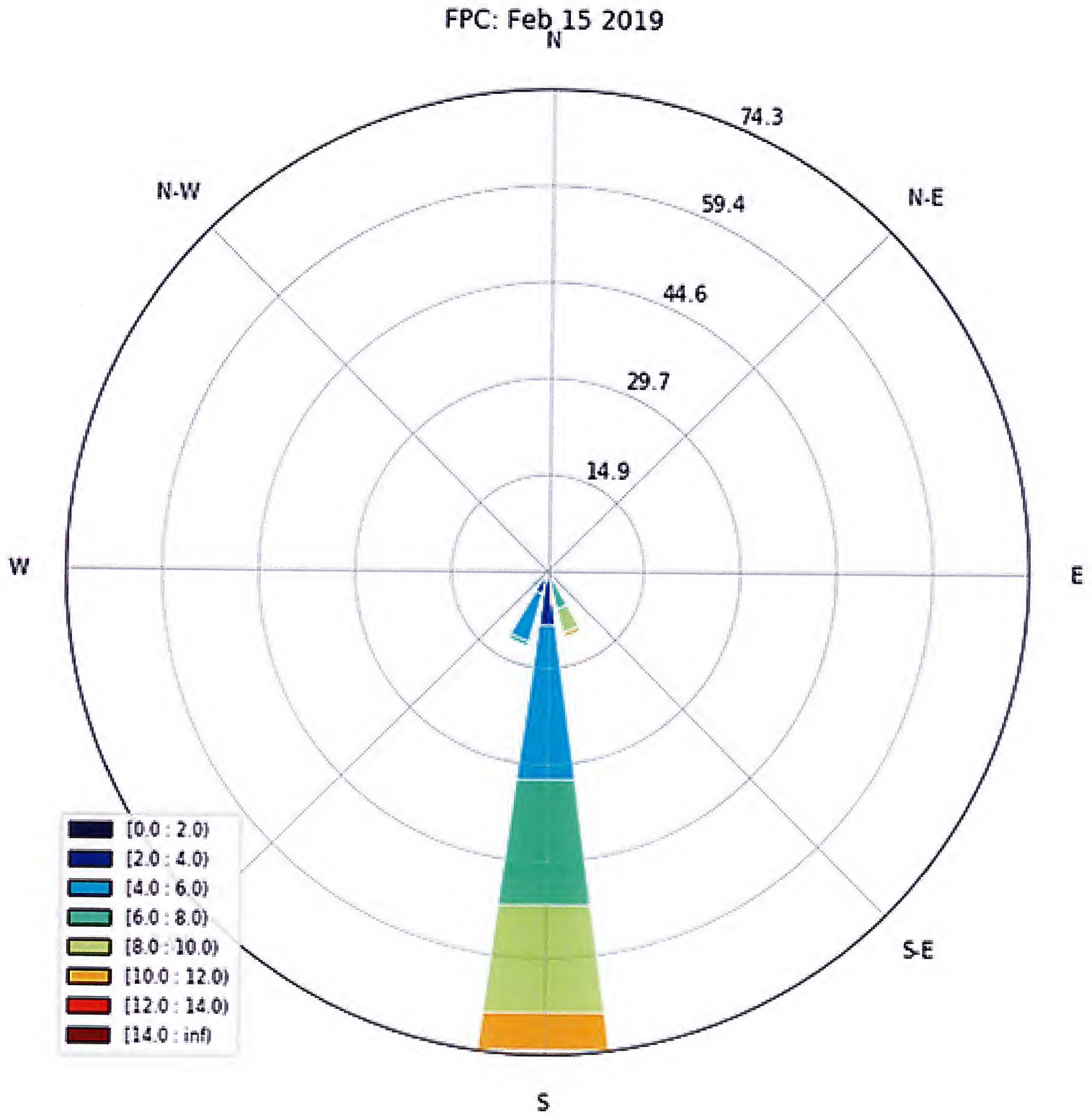

FPC: Feb 5 2019
N
N-E
E
S-E
S
W
N-W
44.8
35.8
26.9
17.9
9.0
[0.0 : 2.0)
[2.0 : 4.0)
[4.0 : 6.0)
[6.0 : 8.0)
[8.0 : 10.0)
[10.0 : 12.0)
[12.0 : 14.0)
[14.0 : inf)

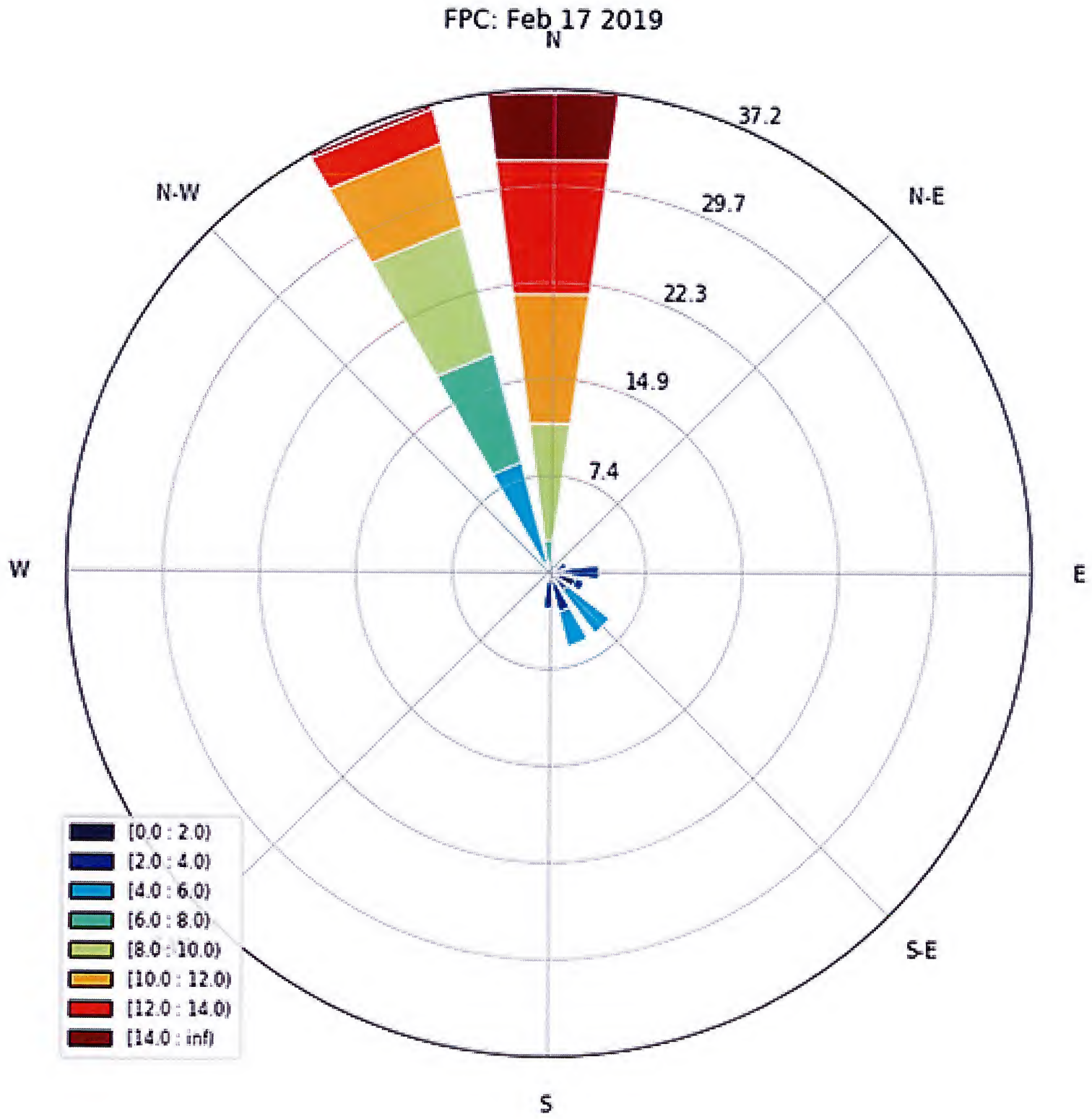

FPC: Feb 7 2019
N
N-E
E
S-E
S
W
N-W
26.7
21.4
16.0
10.7
5.3
[0.0 : 2.0)
[2.0 : 4.0)
[4.0 : 6.0)
[6.0 : 8.0)
[8.0 : 10.0)
[10.0 : 12.0)
[12.0 : 14.0)
[14.0 : inf)

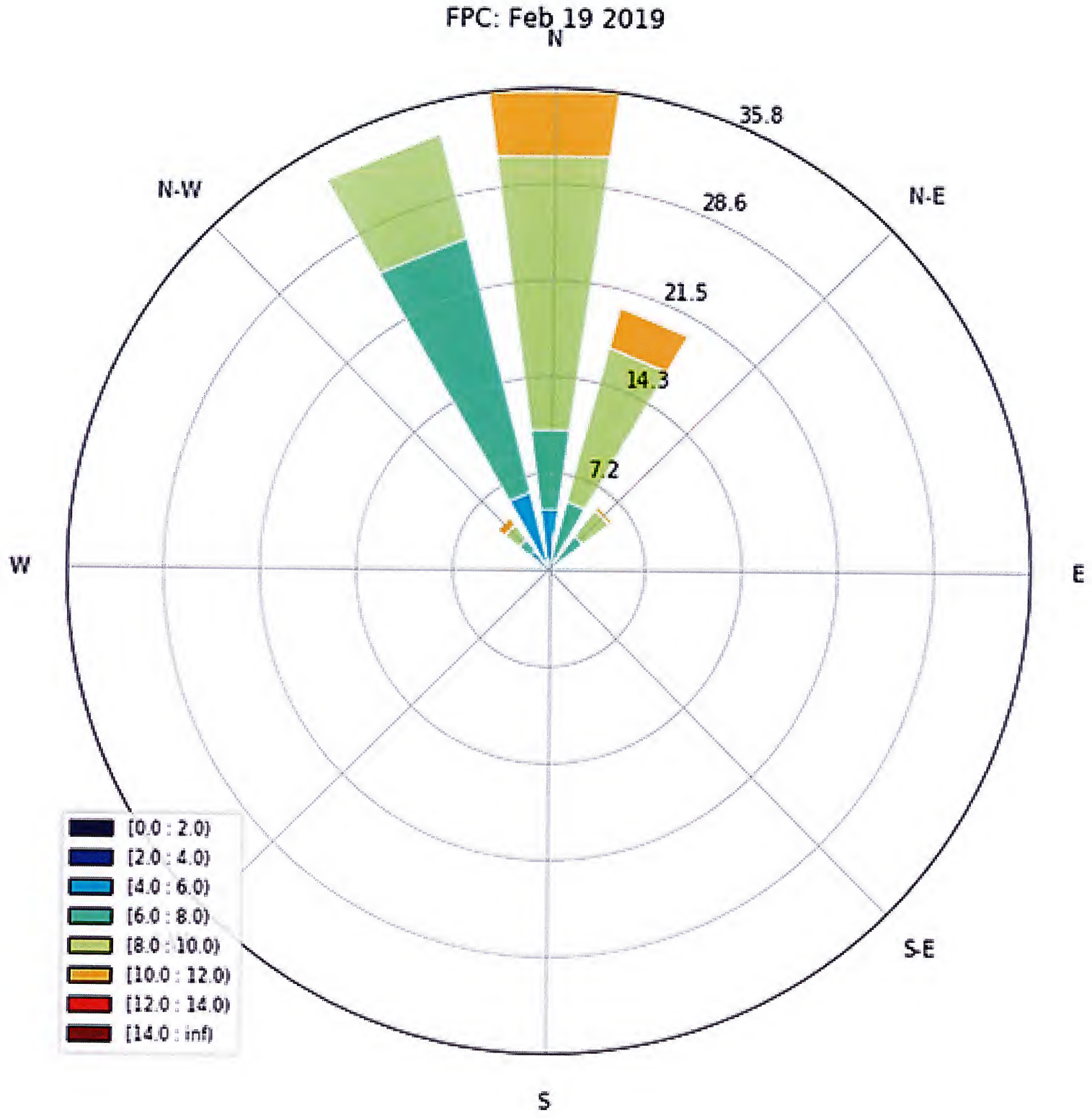

FPC: Feb 9 2019
N
N-E
E
S-E
S
S-W
W
N-W
55.9
44.7
33.5
22.4
11.2
[0.0 : 2.0)
[2.0 : 4.0)
[4.0 : 6.0)
[6.0 : 8.0)
[8.0 : 10.0)
[10.0 : 12.0)
[12.0 : 14.0)
[14.0 : inf)

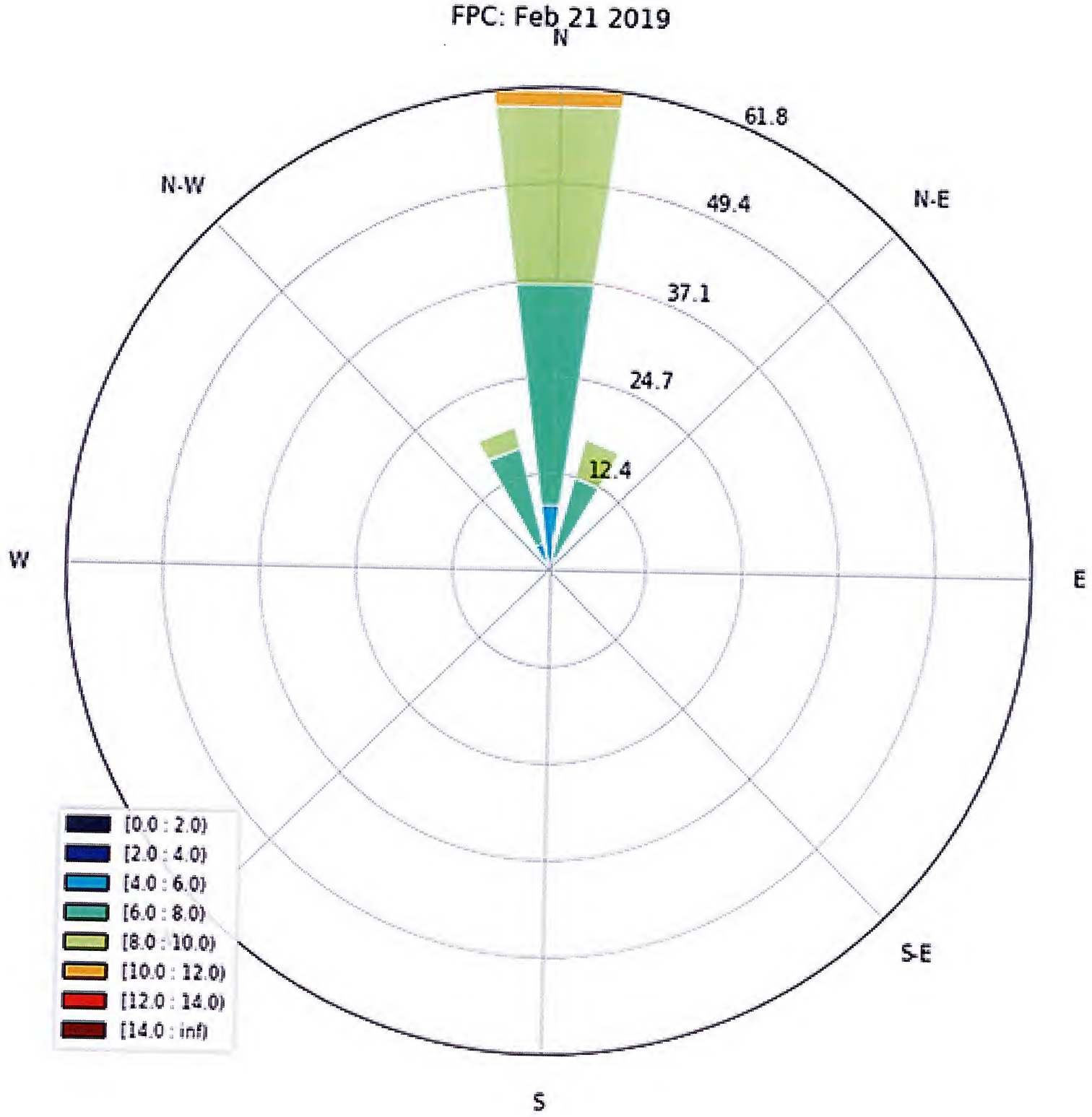

FPC: Feb 11 2019
N
N-E
E
S-E
S
W
N-W
26.7
21.4
16.0
10.7
5.3
[0.0 : 2.0)
[2.0 : 4.0)
[4.0 : 6.0)
[6.0 : 8.0)
[8.0 : 10.0)
[10.0 : 12.0)
[12.0 : 14.0)
[14.0 : inf)

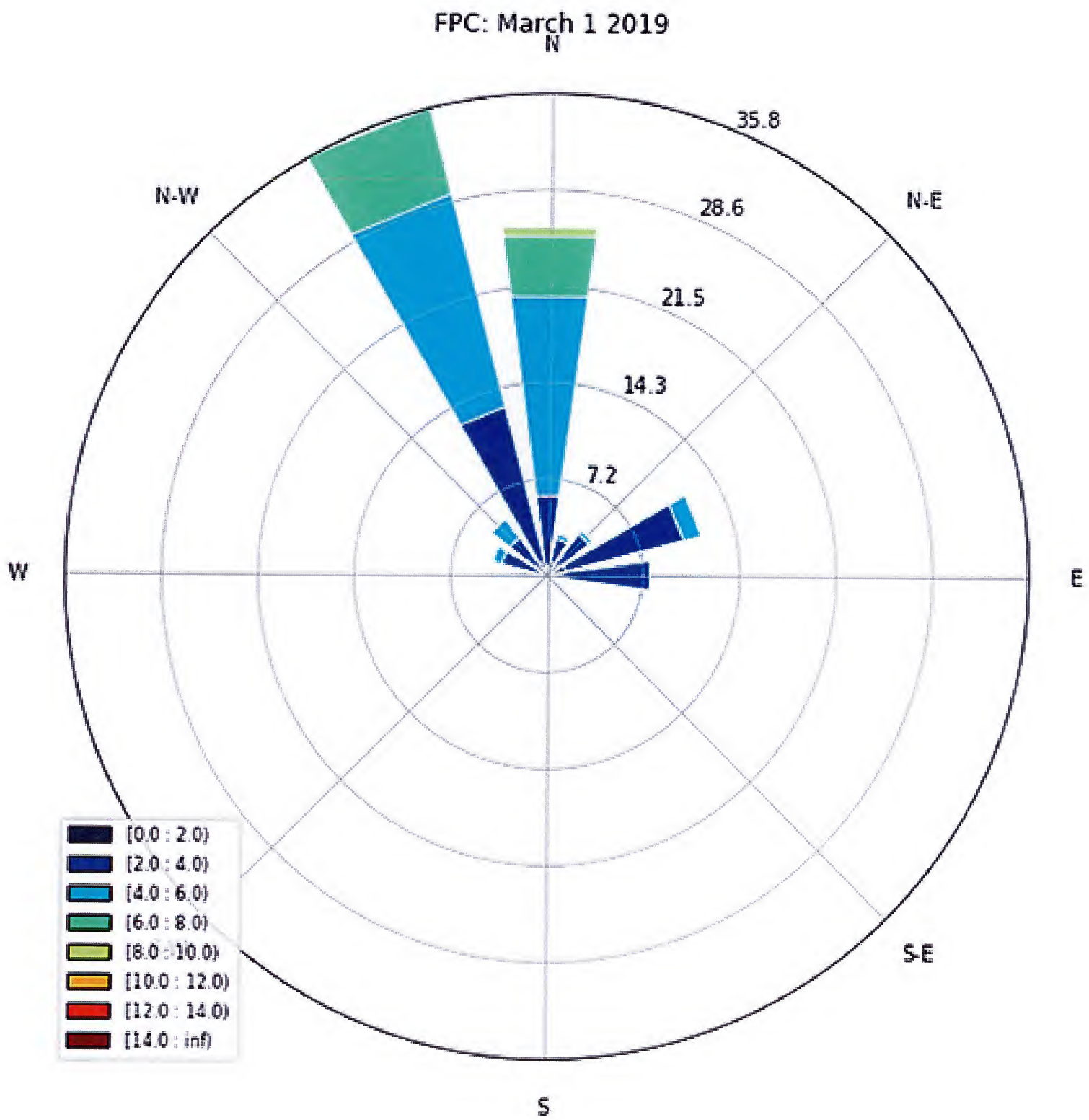

FPC: Feb 13 2019
N
N-E
E
S-E
S
W
N-W
27.1
21.7
16.3
10.8
5.4
[0.0 : 2.0)
[2.0 : 4.0)
[4.0 : 6.0)
[6.0 : 8.0)
[8.0 : 10.0)
[10.0 : 12.0)
[12.0 : 14.0)
[14.0 : inf)

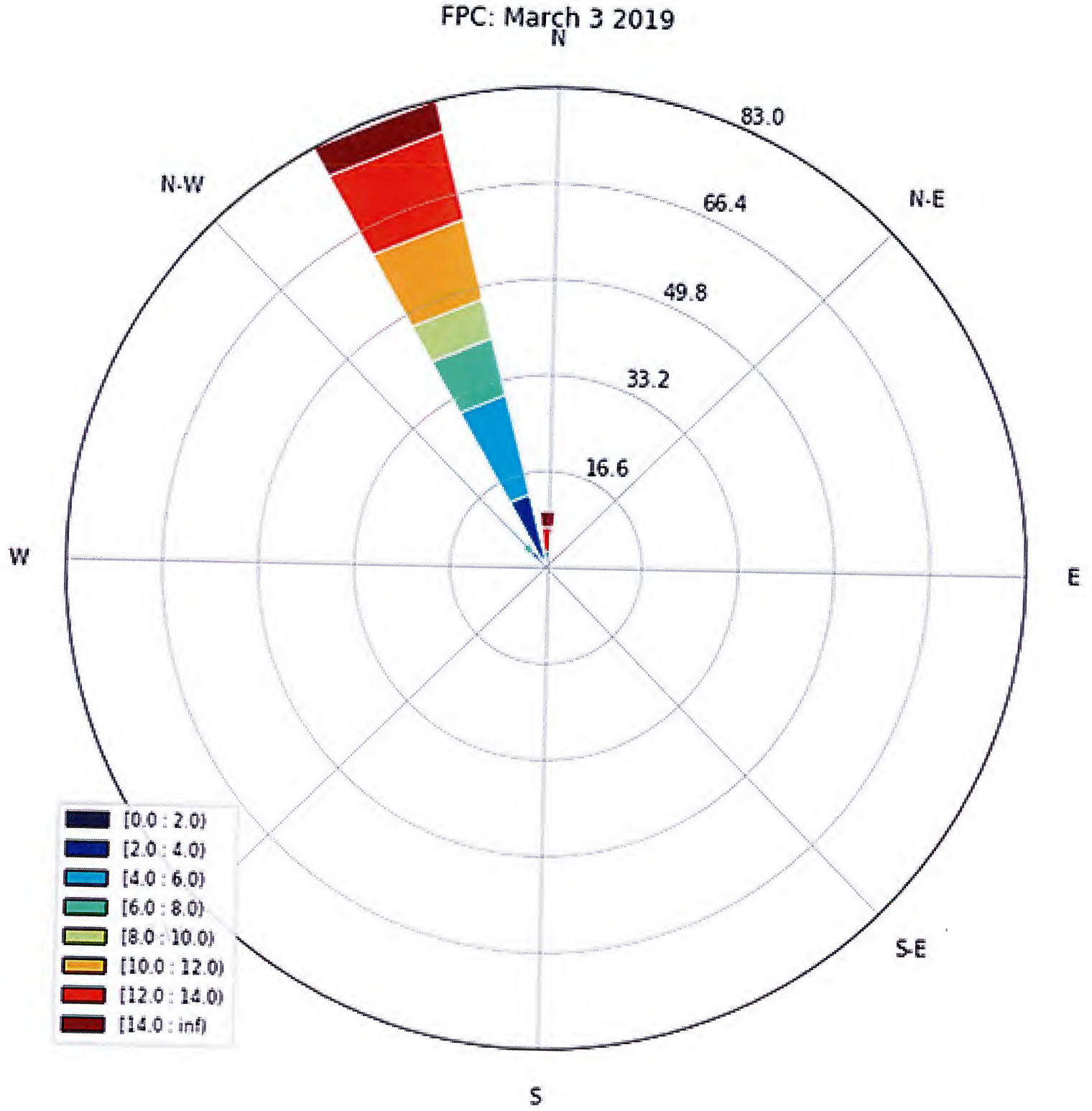

FPC: Feb 15 2019
N
N-E
E
S-E
S
W
N-W
74.3
59.4
44.6
29.7
14.9
[0.0 : 2.0)
[2.0 : 4.0)
[4.0 : 6.0)
[6.0 : 8.0)
[8.0 : 10.0)
[10.0 : 12.0)
[12.0 : 14.0)
[14.0 : inf)

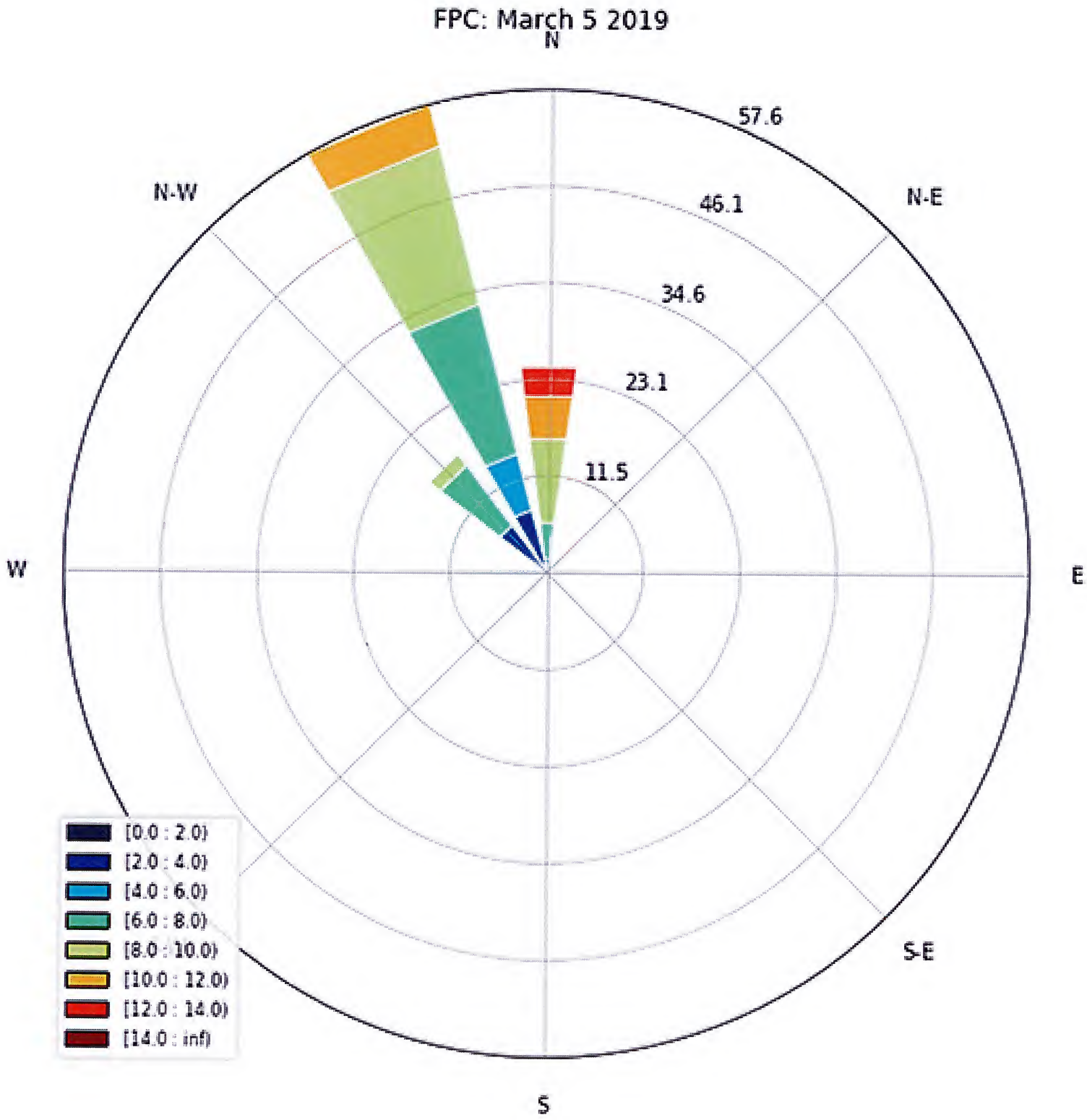

FPC: Feb 17 2019
N
N-W
N-E
W
E
S
S-E
37.2
29.7
22.3
14.9
7.4
[0.0 : 2.0)
[2.0 : 4.0)
[4.0 : 6.0)
[6.0 : 8.0)
[8.0 : 10.0)
[10.0 : 12.0)
[12.0 : 14.0)
[14.0 : inf)

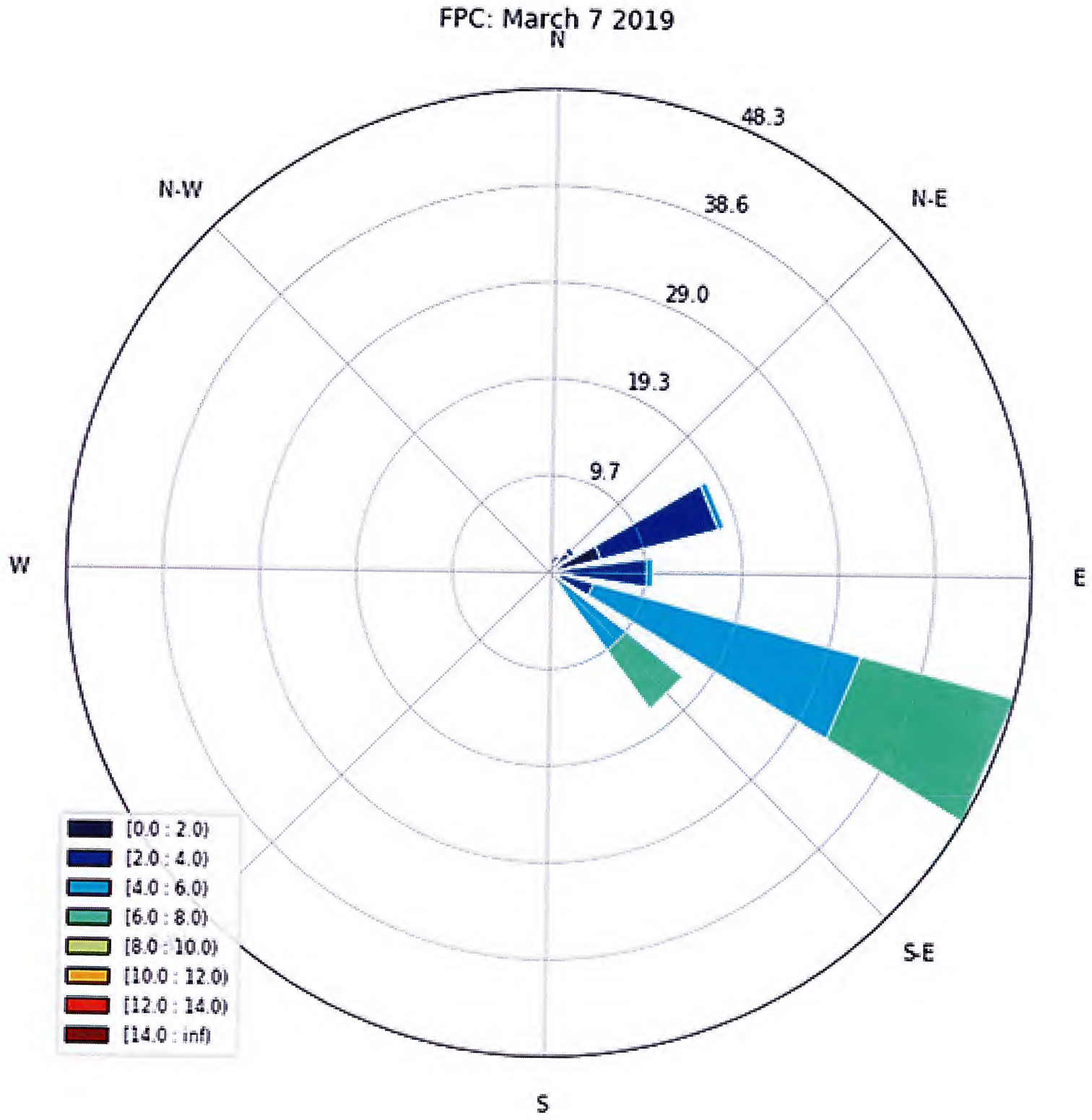

FPC: Feb 19 2019
N
N-E
E
S-E
S
W
N-W
35.8
28.6
21.5
14.3
7.2
[0.0 : 2.0)
[2.0 : 4.0)
[4.0 : 6.0)
[6.0 : 8.0)
[8.0 : 10.0)
[10.0 : 12.0)
[12.0 : 14.0)
[14.0 : inf)

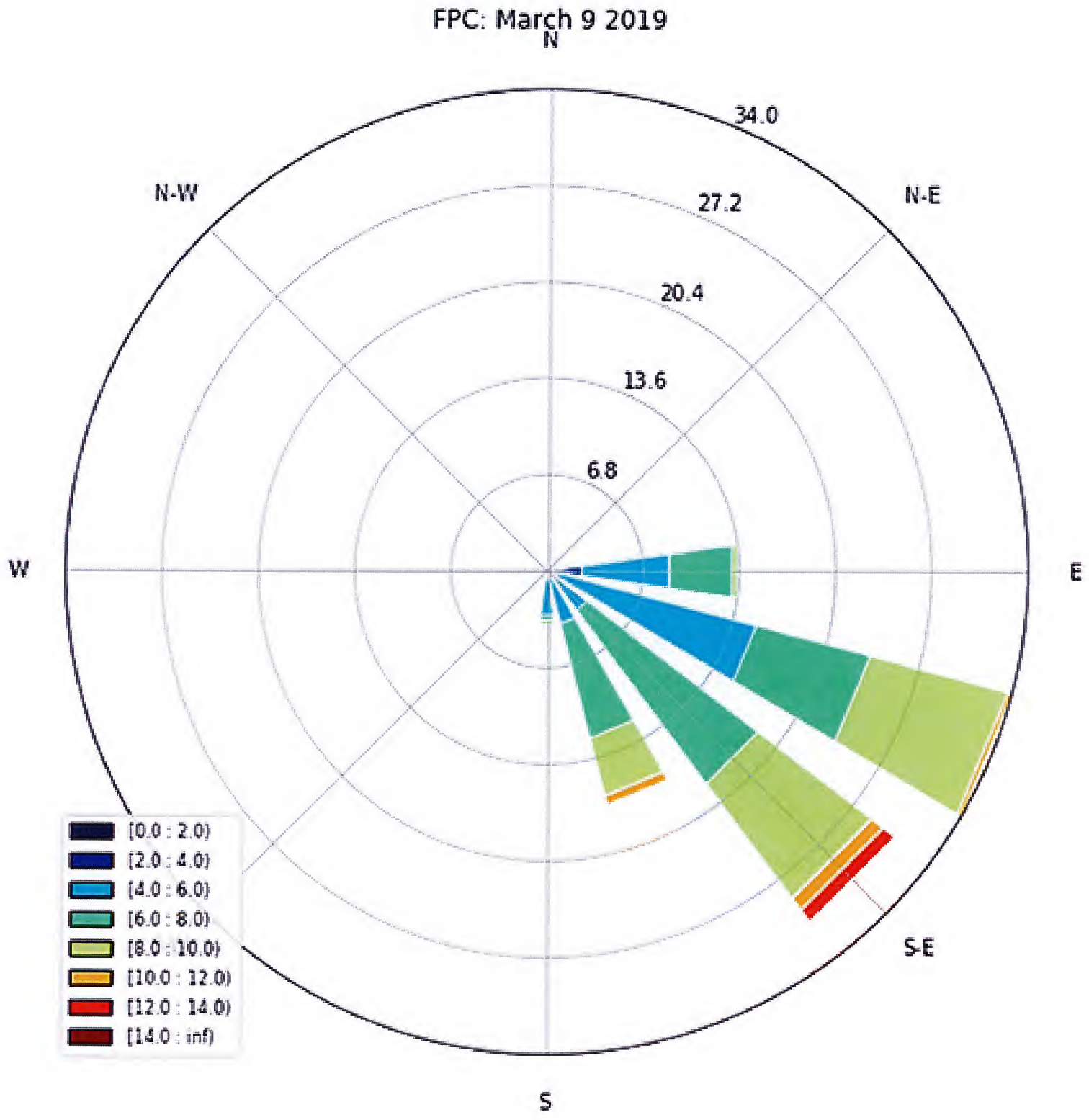

FPC: Feb 21 2019
N
N-E
E
S-E
S
W
N-W
61.8
49.4
37.1
24.7
12.4
[0.0 : 2.0)
[2.0 : 4.0)
[4.0 : 6.0)
[6.0 : 8.0)
[8.0 : 10.0)
[10.0 : 12.0)
[12.0 : 14.0)
[14.0 : inf)

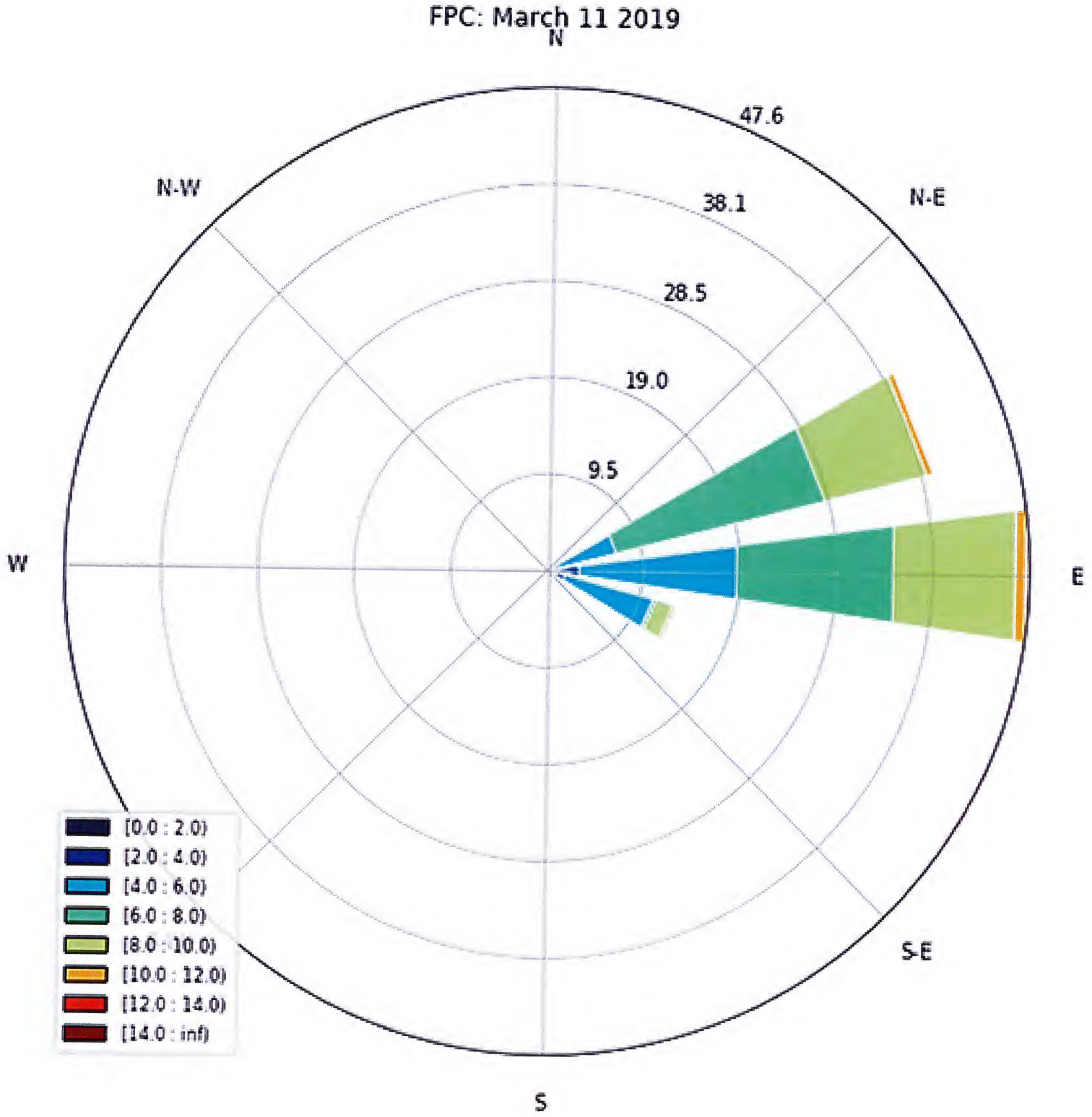

FPC: March 1 2019
N
N-E
E
S-E
S
W
N-W
35.8
28.6
21.5
14.3
7.2
[0.0 : 2.0)
[2.0 : 4.0)
[4.0 : 6.0)
[6.0 : 8.0)
[8.0 : 10.0)
[10.0 : 12.0)
[12.0 : 14.0)
[14.0 : inf)

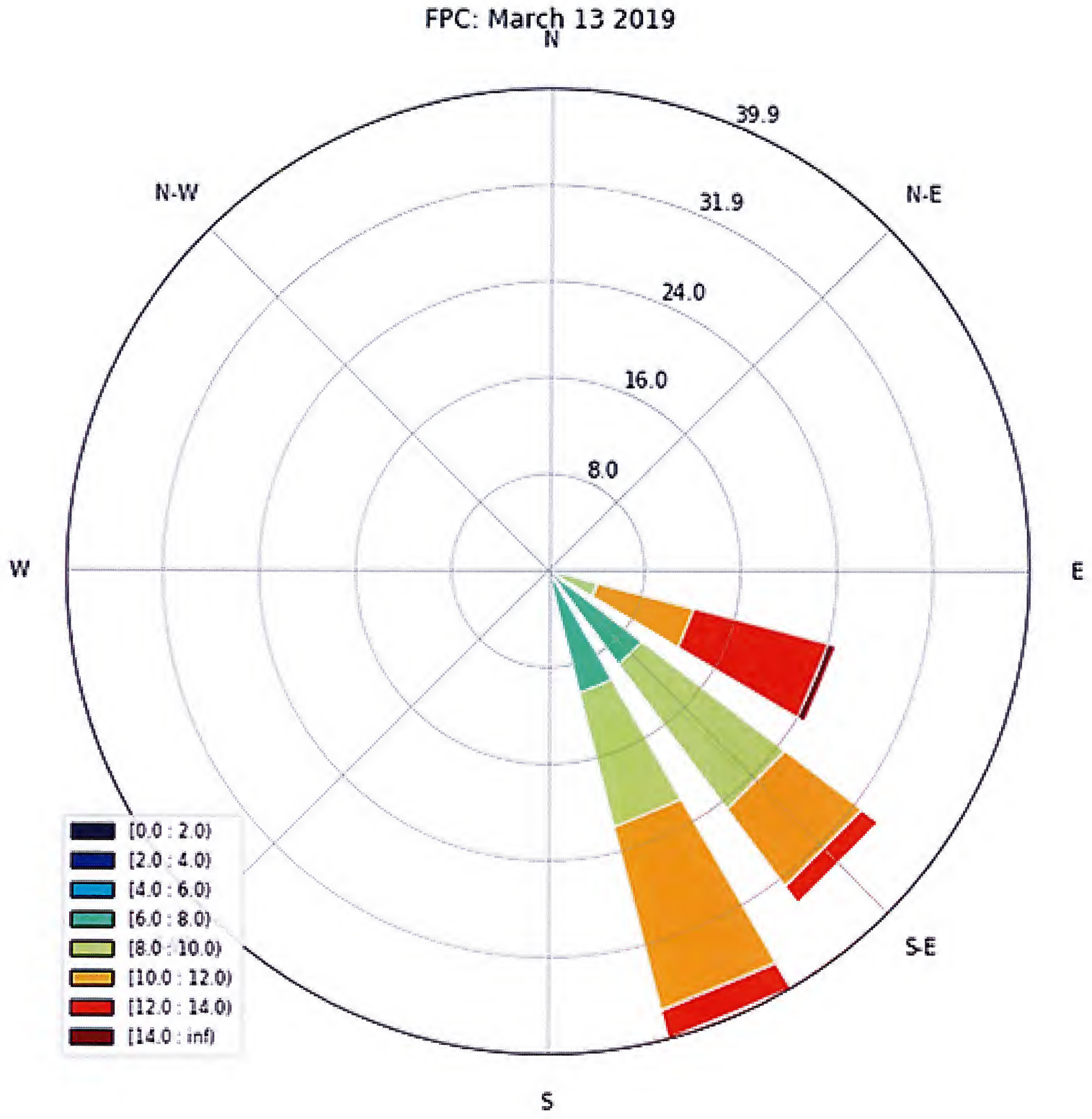

FPC: March 3 2019
N
N-E
E
S-E
S
W
N-W
83.0
66.4
49.8
33.2
16.6
[0.0 : 2.0)
[2.0 : 4.0)
[4.0 : 6.0)
[6.0 : 8.0)
[8.0 : 10.0)
[10.0 : 12.0)
[12.0 : 14.0)
[14.0 : inf)

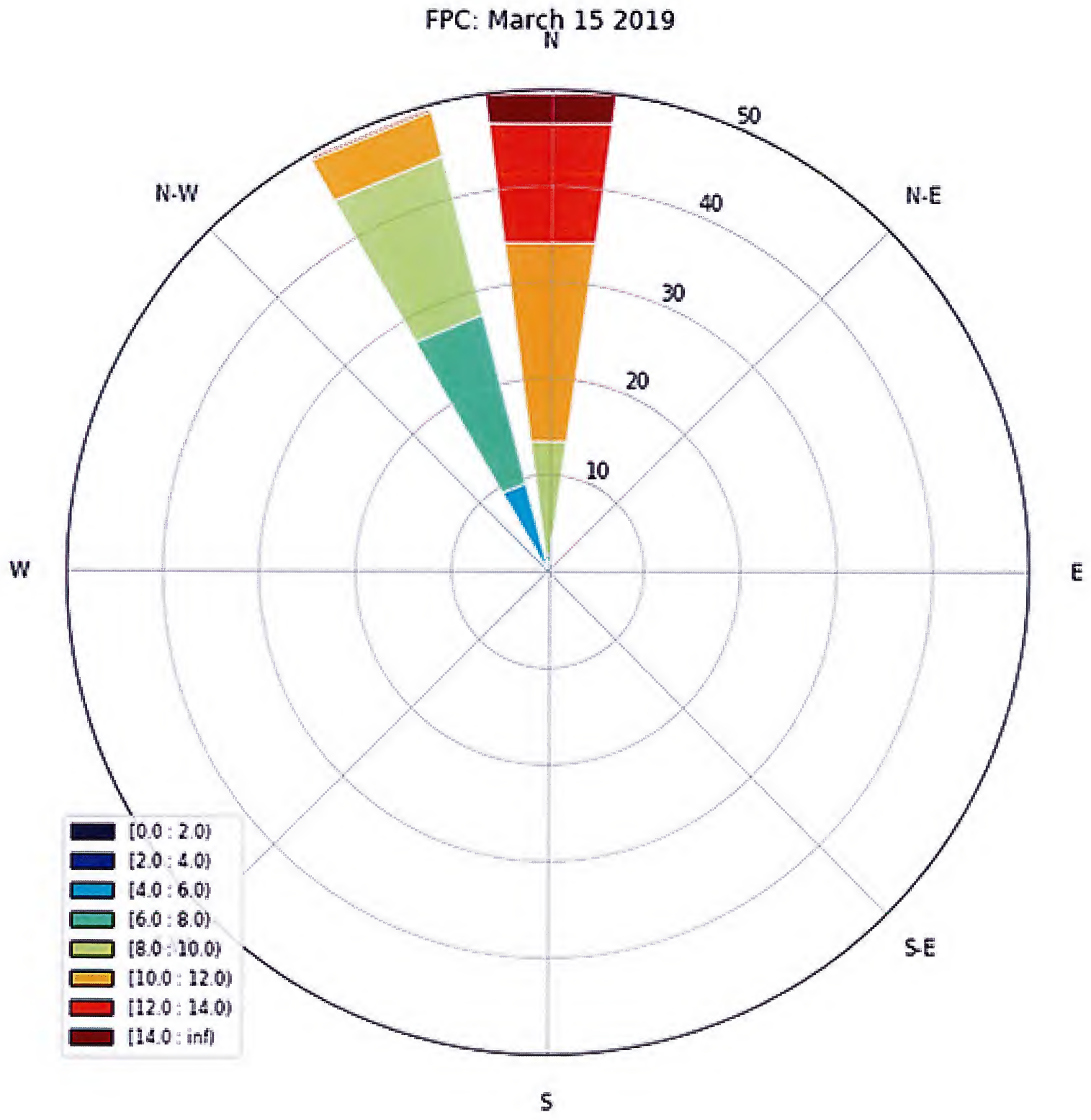

FPC: March 5 2019
N
N-E
E
S-E
S
W
N-W
57.6
46.1
34.6
23.1
11.5
[0.0 : 2.0)
[2.0 : 4.0)
[4.0 : 6.0)
[6.0 : 8.0)
[8.0 : 10.0)
[10.0 : 12.0)
[12.0 : 14.0)
[14.0 : inf)

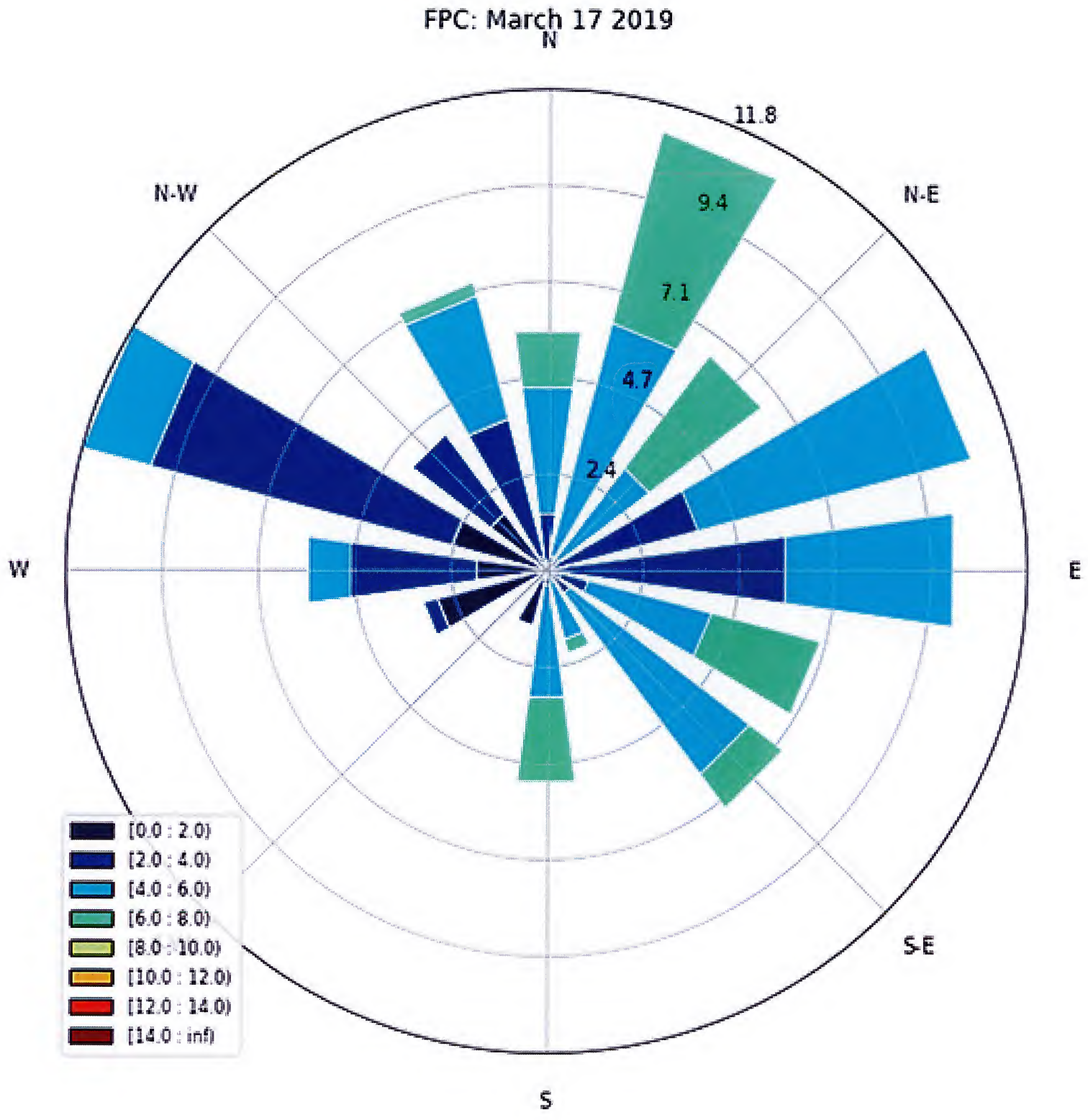

FPC: March 7 2019
N
N-E
E
S-E
S
S-W
W
N-W
48.3
38.6
29.0
19.3
9.7
[0.0 : 2.0)
[2.0 : 4.0)
[4.0 : 6.0)
[6.0 : 8.0)
[8.0 : 10.0)
[10.0 : 12.0)
[12.0 : 14.0)
[14.0 : inf)

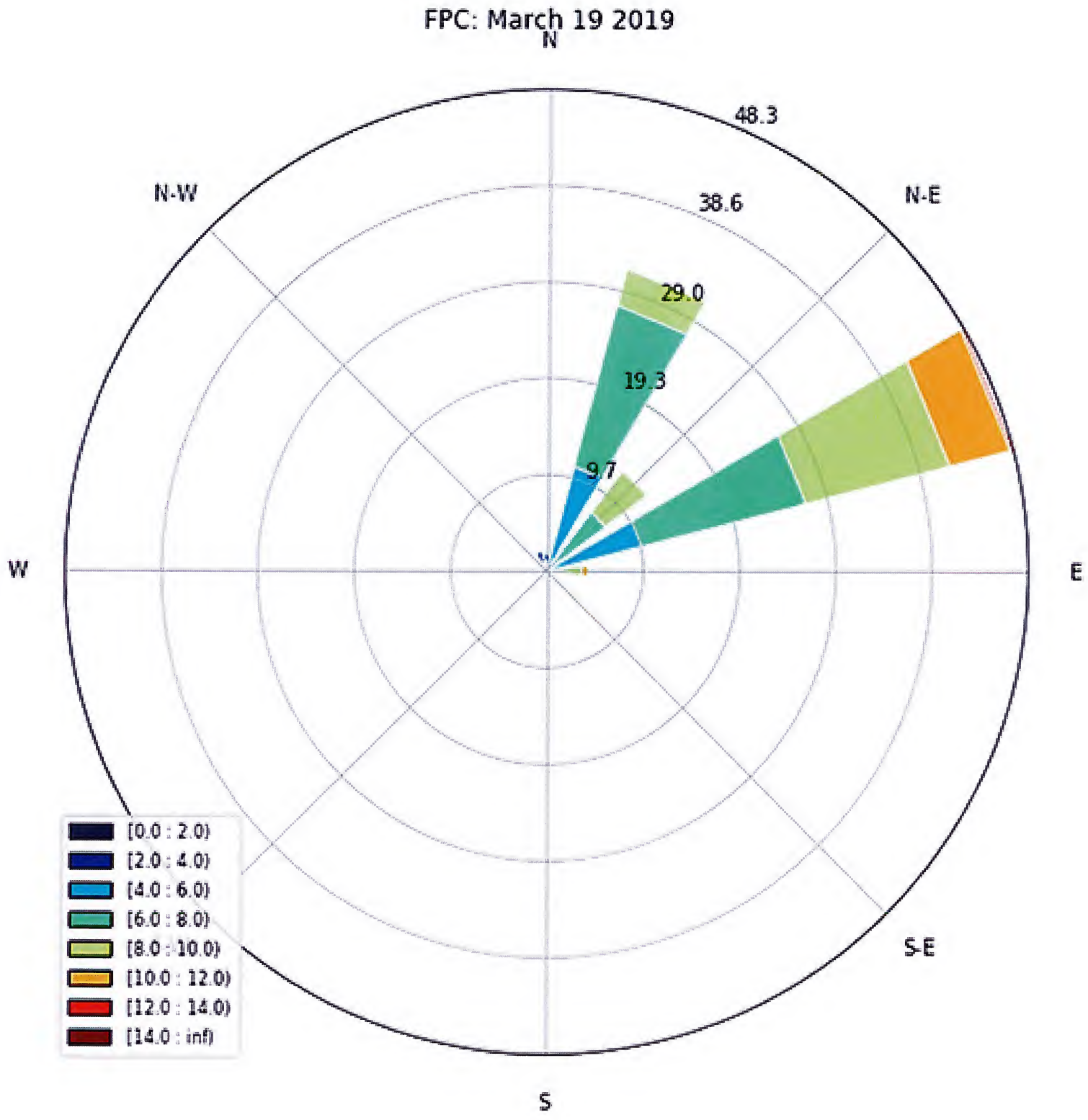

FPC: March 9 2019
N
N-E
E
S-E
S
W
N-W
34.0
27.2
20.4
13.6
6.8
[0.0 : 2.0)
[2.0 : 4.0)
[4.0 : 6.0)
[6.0 : 8.0)
[8.0 : 10.0)
[10.0 : 12.0)
[12.0 : 14.0)
[14.0 : inf)

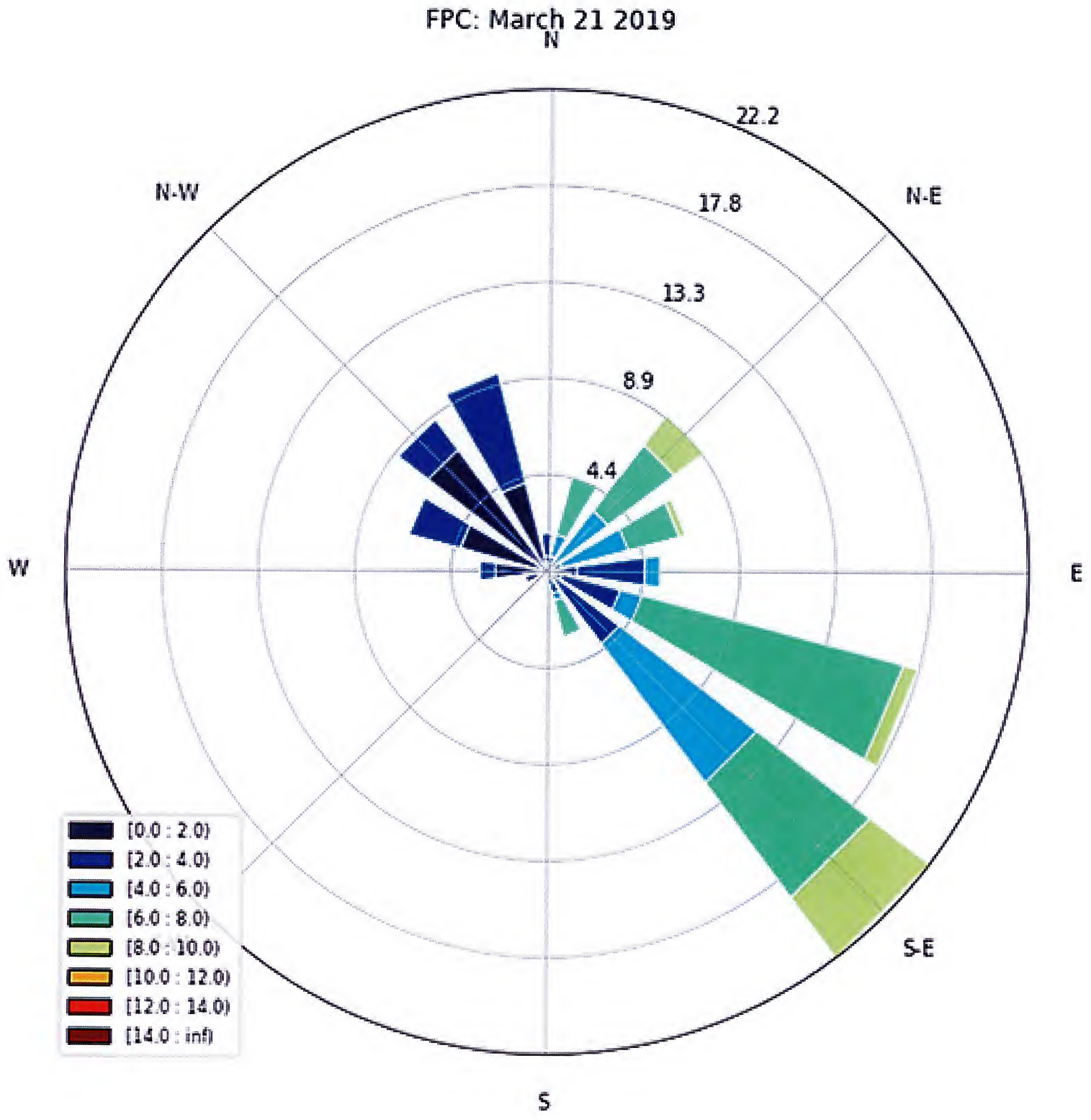

FPC: March 11 2019
N
N-E
E
S-E
S
W
N-W
47.6
38.1
28.5
19.0
9.5
[0.0 : 2.0)
[2.0 : 4.0)
[4.0 : 6.0)
[6.0 : 8.0)
[8.0 : 10.0)
[10.0 : 12.0)
[12.0 : 14.0)
[14.0 : inf)

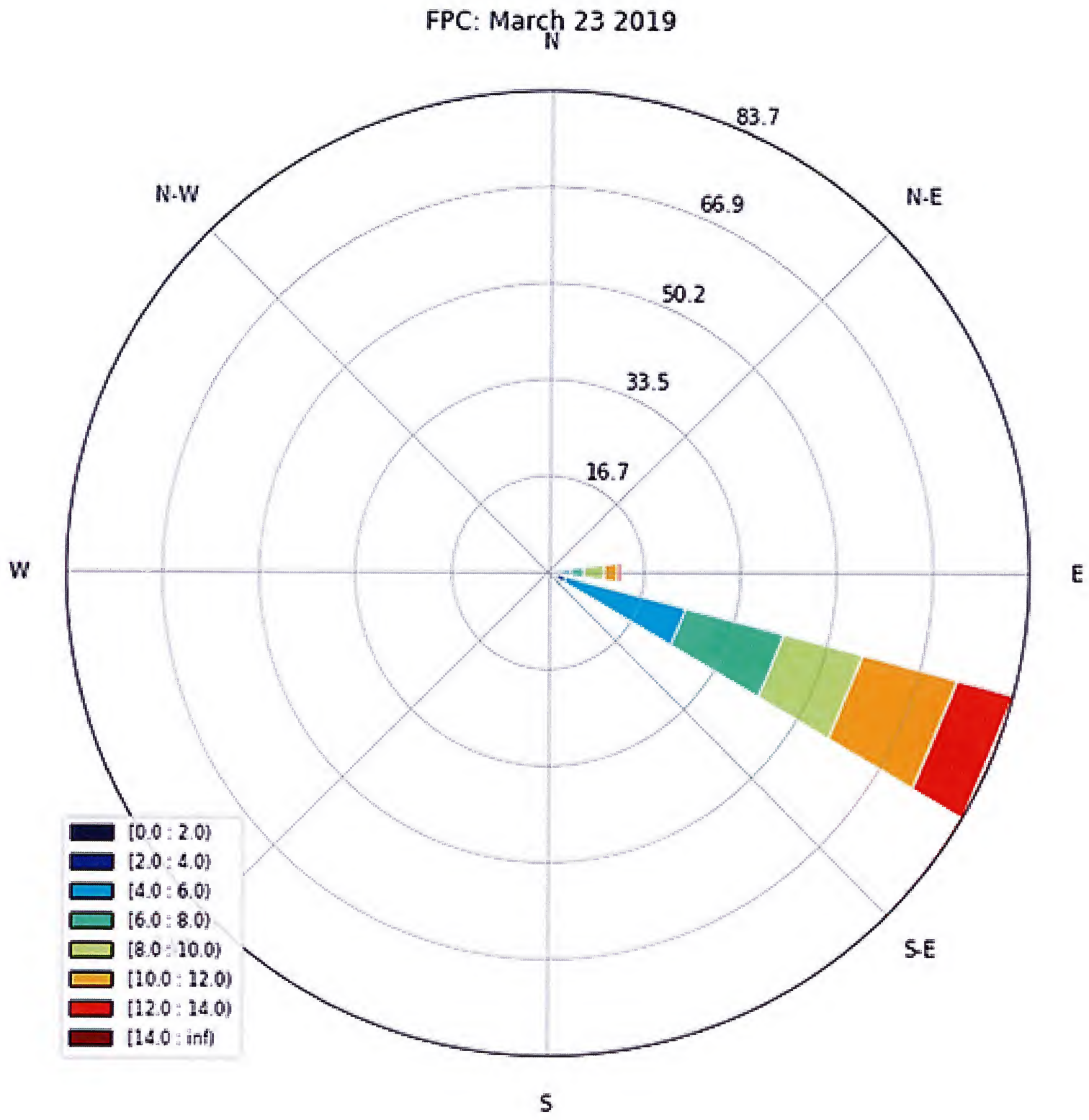

FPC: March 13 2019
N
N-E
E
S-E
S
W
N-W
39.9
31.9
24.0
16.0
8.0
[0.0 : 2.0)
[2.0 : 4.0)
[4.0 : 6.0)
[6.0 : 8.0)
[8.0 : 10.0)
[10.0 : 12.0)
[12.0 : 14.0)
[14.0 : inf)

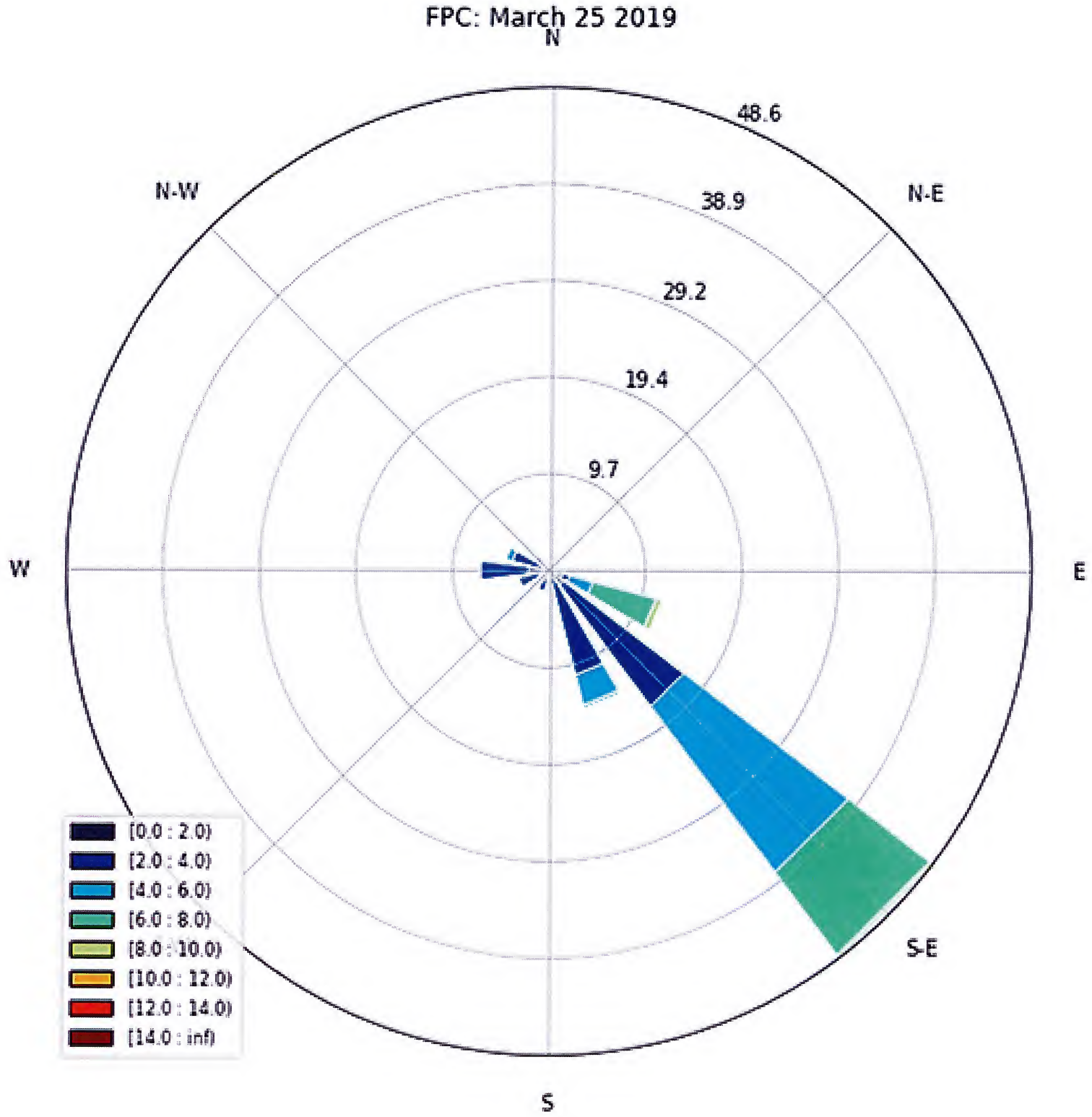

FPC: March 15 2019
N
N-E
E
S-E
S
W
N-W
10
20
30
40
50
[0.0 : 2.0)
[2.0 : 4.0)
[4.0 : 6.0)
[6.0 : 8.0)
[8.0 : 10.0)
[10.0 : 12.0)
[12.0 : 14.0)
[14.0 : inf)

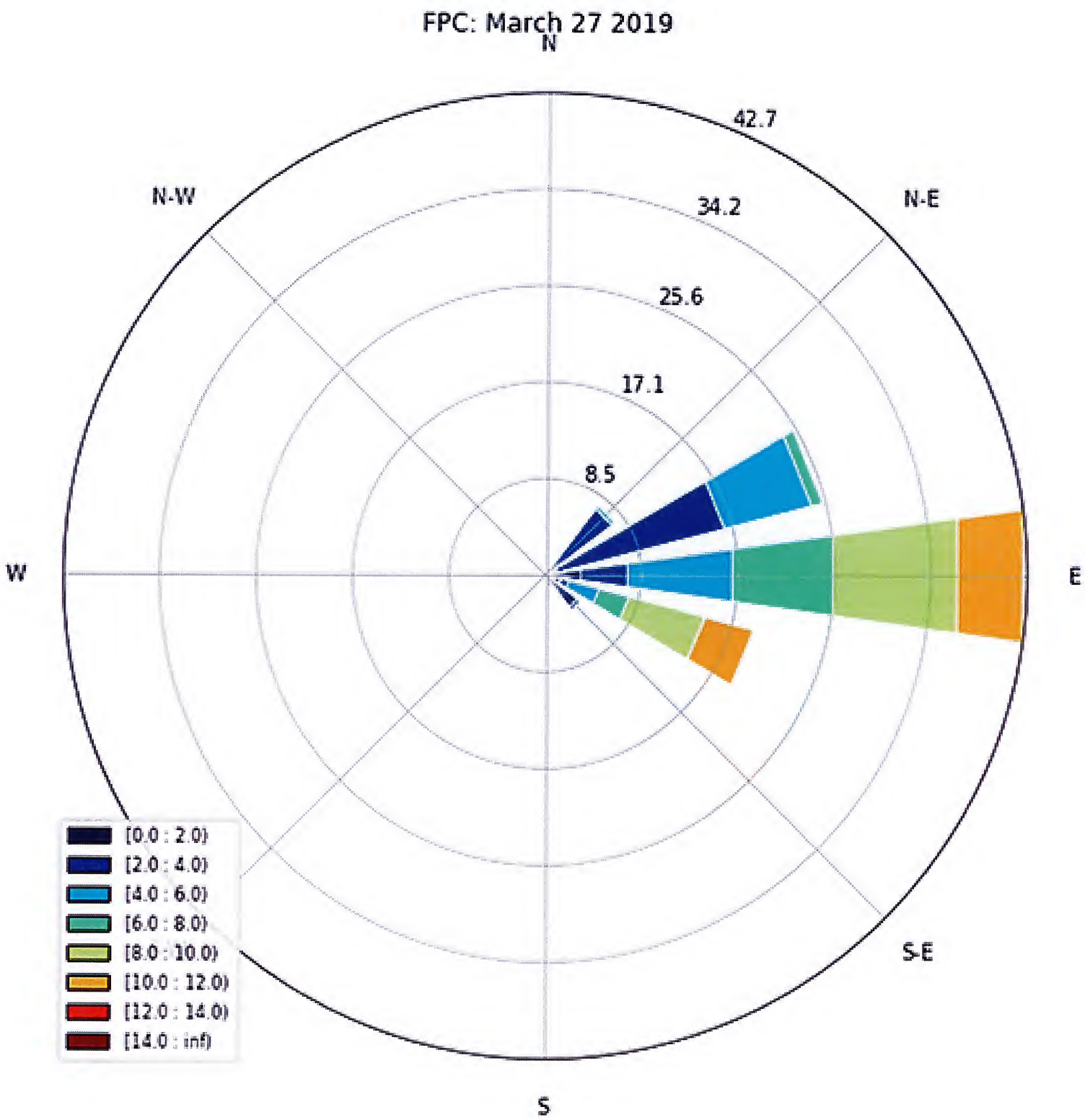

FPC: March 17 2019
N
N-E
E
S-E
S
W
N-W
11.8
9.4
7.1
4.7
2.4
[0.0 : 2.0)
[2.0 : 4.0)
[4.0 : 6.0)
[6.0 : 8.0)
[8.0 : 10.0)
[10.0 : 12.0)
[12.0 : 14.0)
[14.0 : inf)

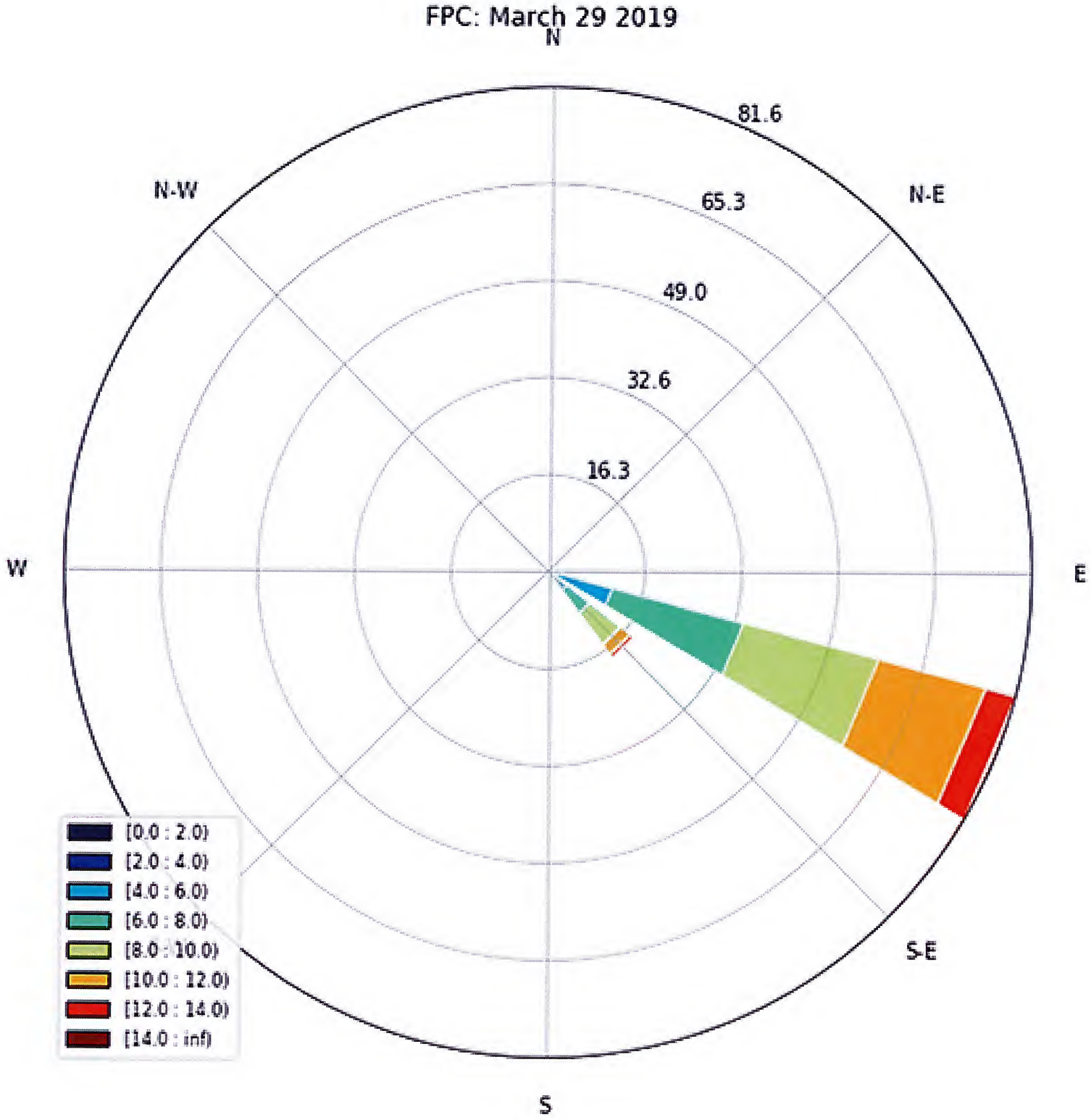

FPC: March 19 2019
N
N-E
E
S-E
S
W
N-W
48.3
38.6
29.0
19.3
9.7
[0.0 : 2.0)
[2.0 : 4.0)
[4.0 : 6.0)
[6.0 : 8.0)
[8.0 : 10.0)
[10.0 : 12.0)
[12.0 : 14.0)
[14.0 : inf)

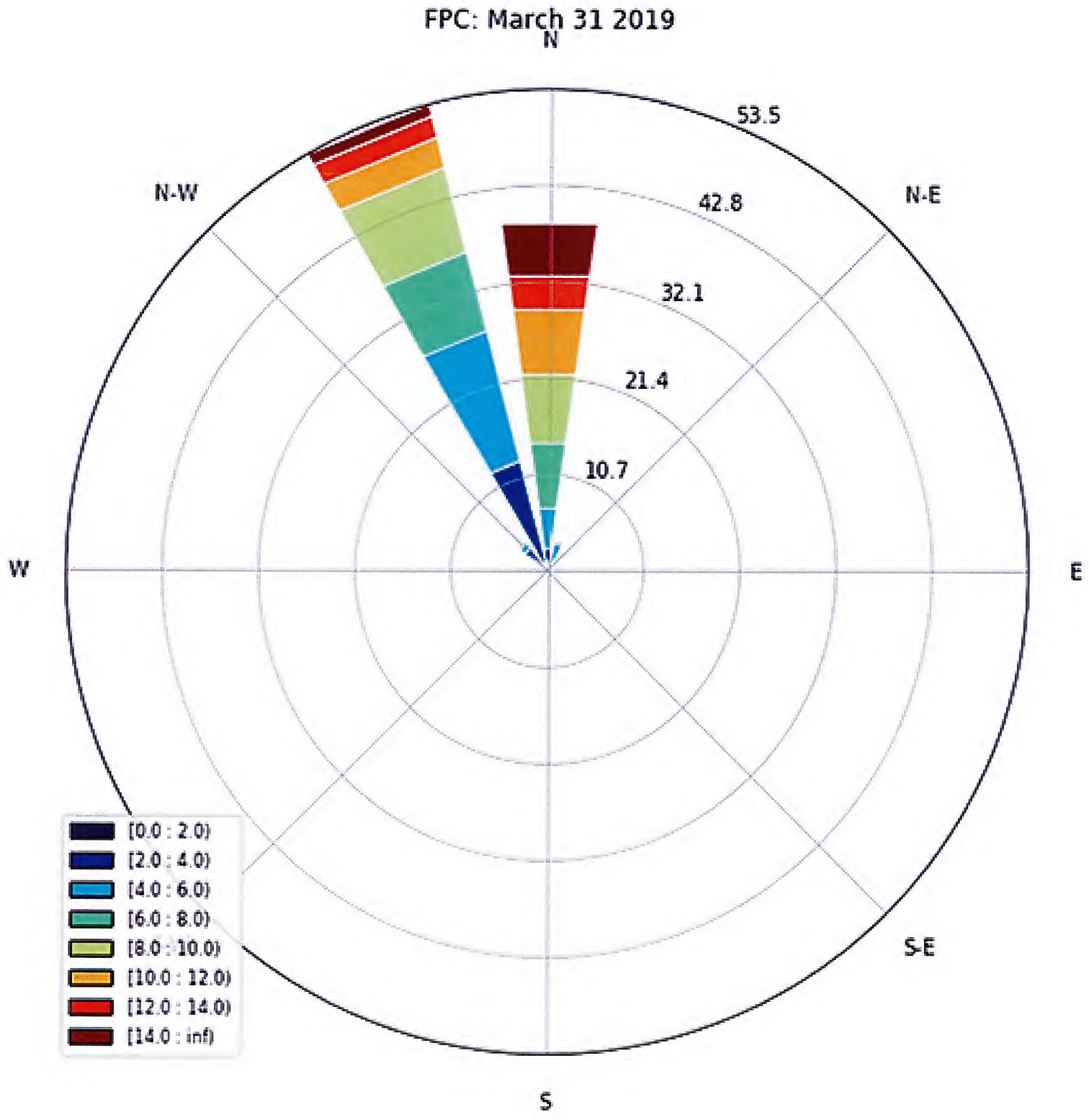

FPC: March 21 2019
N
N-E
E
S-E
S
W
N-W
22.2
17.8
13.3
8.9
4.4
[0.0 : 2.0)
[2.0 : 4.0)
[4.0 : 6.0)
[6.0 : 8.0)
[8.0 : 10.0)
[10.0 : 12.0)
[12.0 : 14.0)
[14.0 : inf)


FPC: March 23 2019
N
N-E
E
S-E
S
W
N-W
83.7
66.9
50.2
33.5
16.7
[0.0 : 2.0)
[2.0 : 4.0)
[4.0 : 6.0)
[6.0 : 8.0)
[8.0 : 10.0)
[10.0 : 12.0)
[12.0 : 14.0)
[14.0 : inf)


FPC: March 25 2019
N
N-E
E
S-E
S
W
N-W
48.6
38.9
29.2
19.4
9.7
[0.0 : 2.0)
[2.0 : 4.0)
[4.0 : 6.0)
[6.0 : 8.0)
[8.0 : 10.0)
[10.0 : 12.0)
[12.0 : 14.0)
[14.0 : inf)


FPC: March 27 2019
N
N-E
E
S-E
S
W
N-W
42.7
34.2
25.6
17.1
8.5
[0.0 : 2.0)
[2.0 : 4.0)
[4.0 : 6.0)
[6.0 : 8.0)
[8.0 : 10.0)
[10.0 : 12.0)
[12.0 : 14.0)
[14.0 : inf)


FPC: March 29 2019
N
N-E
E
S-E
S
W
N-W
81.6
65.3
49.0
32.6
16.3
[0.0 : 2.0)
[2.0 : 4.0)
[4.0 : 6.0)
[6.0 : 8.0)
[8.0 : 10.0)
[10.0 : 12.0)
[12.0 : 14.0)
[14.0 : inf)


FPC: March 31 2019
N
N-E
E
S-E
S
W
N-W
53.5
42.8
32.1
21.4
10.7
[0.0 : 2.0)
[2.0 : 4.0)
[4.0 : 6.0)
[6.0 : 8.0)
[8.0 : 10.0)
[10.0 : 12.0)
[12.0 : 14.0)
[14.0 : inf)